

12th ESGENA Conference, during the 16th United European Gastroenterology Week (UEGW) in October 2008 in Vienna

SESSION 1: Sedation

Application of Propofol (Bolus, Pump, TCI, PCI, CAPS)

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Propofol is wide spread used in gastrointestinal endoscopy because of its efficacy in sedation combined with short recovery time. Several application forms have been developed to make disoprivan application easier and safer.

Target organ is the brain, but considerable amounts of the substance are distributed to muscle and fat. There is only a small gap between dosages insufficient for appropriate sedation and dosages with toxic effects like breathing arrest. This is especially a hazard in repeated bolus application. Obvious consequence is to use a perfusor system (often started with a single bolus). However, even with stable perfusor rates propofol concentration may rise continuously causing toxic side effects. Pharmacologic background are different distribution partitions (e.g. muscles and fat), which are filled and redistributed with specific velocities. Mathematic models have been developed for this complex pharmacokinetic and established in microprocessor driven perfusor systems; continuously adapted flowrates warrant steady drug concentration in the brain (TCI: target controlled infusion). However the system cannot detect serious clinical events like hypotension or pain induced stress. The latter can be overcome by integrating the patient in the system: the awaking patient can rise the flow rate at the touch of a button (PCI: patient controlled infusion). Once again this system cannot detect adverse events like breathing or even cardiac arrest. Computer assisted perfusion systems (CAPS) try to overcome these deficiencies by inclusion of several current clinical parameters. This approach is still under investigation, but experience with other highly developed systems (e.g. brain activity driven systems) revealed, that even sophisticated systems need control by a skilled person.

In contrast, trained caregivers can warrant safe disoprivan sedation with a few current clinical parameters. The safety of nurse administered propofol sedation (NAPS) has been proved in large trials, which are the main focus of the succeeding lecture.

Hypnotherapy an overview - Is there a place in Gastroenterology?

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Hypnotherapy is an ancient therapy first thought to have been used by the Egyptians. Its use in modern day medicine is limited; in the UK hypnotherapy is mostly funded privately by individual patients/clients.

In Vienna, Franz Anton Mesmer (1734 –1815), graduated in medicine. He postulated that illness was associated with disturbances in the natural tidal flow of animal magnetism in the body and that he had an ability to restore this thus healing the patient. Thus mesmerising was a phenomenon of hypnotherapy practices for many years, becoming popular throughout Europe until it became discredited and unfashionable.

In recent times Hypnotherapy has become more popular once again. It is still seen in some quarters as 'hocus pocus', however those who have benefited are convinced of its benefits to health and wellbeing.

The link between body and mind is a difficult area for scientific randomised controlled trials which is the medical 'gold standard' for evidence, so how is hypnotherapy to convince the medical world of its benefits?

In this presentation I will explore what Hypnotherapy is, the reason why hypnotherapy may be of use to patients with gastrointestinal disorders, whether it is actually a 'therapy' producing improved patient care or merely the perception of the therapist and the client convinced of its power and finally how we may be able to demonstrate evidence for its use in medical practice.

SESSION 2: Paediatric Patients in Endoscopy

Guidelines for paediatric endoscopy

Paraic McGrogan, UK

Paediatric Gastroenterology has taken major strides over the last 15 years. This has been supported and matched by the significant technical developments in gastrointestinal endoscopy. Although there is overlap in Paediatric and Adult GI pathology, it is important to recognise that there needs to be a specific approach to endoscopic assessment in children. This includes an understanding of presentation of disease within this age group, how to effectively communicate with children and families, and safe appropriate use of sedation or anaesthesia.

It is recommended that paediatric endoscopy training is undertaken in dedicated paediatric endoscopy centres. Previously the focus had been in ensuring that trainees had obtained appropriate procedural numbers to ensure competency. Recently this has been abandoned in favour of assessment of the trainees' competences with more summative and formative assessments. There is no object criteria for competency and the focus has now moved to assessment including direct observational of procedural skills (DOPS) and mini – clinical evaluation exercise (Mini-CEX).

Recommendations are now in place that all trainees undertake a hands-on training course at the commencement of their training and have access to virtual endoscopy mannequin. This has been shown to improve both technical competency and also lesion recognition. Similar to adults, it is recognised within paediatrics that there should be two levels of competencies, diagnostic endoscopy (level 1) and therapeutic endoscopy (level 2). The trainee is expected to keep a log book and currently there is the development of a paediatric endoscopy curriculum which will be published next year. In support of trainees and trainers, web and multi-media based lesion recognition software is being developed to ensure paediatric review of both standards and skills. The different speciality societies are developing common training standards to allow seamless training of paediatricians and surgeons alike. There is also a move for paediatric endoscopy training to be overseen by the joint advisory group for GI endoscopy (JAG) of the British Society of Gastroenterology (BSG).

Similar to our adult colleagues, we are moving towards re-evaluation and re-accreditation of the skill level of all those undertaking endoscopies within paediatric and adolescents. This is likely to be a 5 yearly peer review process. It is planned that it will be mandatory for those who wish to train to undertake “train the trainers” courses. Regular review of paediatric endoscopy units wishing to be recognised as training facility will include assessment of the trainers, the facilities and the educational resources. A minimum number of procedures per unit time will be expected as part of the re-validation process.

Within the paediatric endoscopy setting, capsular endoscopy and push enteroscopy are now feasible practical modalities that have enhanced medical management. Newer endoscopy techniques such as the Endoscinch have been successfully developed within paediatrics. Other modalities such as computer tomography colonography have yet to establish a role within the paediatric endoscopy setting. Guidelines are also being set to match these developments.

Paediatric Bronchoscopy

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The last thirty years have seen major developments in bronchoscope technology, with the advent of small steerable bronchoscopes leading to increased indications and applications. Most recently the development of a 2.7 mm external diameter flexible bronchoscope with 1.2 mm suction channel has revolutionised the assessment of smaller children, while the 2.2 mm external diameter flexible bronchoscope, although it does not have a suction channel, allows assessment of the airways of tiny neonates. In parallel there have been major advances in paediatric anaesthesia, such that even very small, sick infants can be examined safely.

Flexible endoscopy of the airways in children includes both upper and lower airway assessment. Even under general anaesthesia, assessment will include the nose and upper airway. The paediatric airway is significantly different from the adult airway, and the indications for bronchoscopy are significantly different. In contrast to adults endobronchial tumours are exceptionally rare while assessment of airway anatomy is

much more common. Indications for paediatric flexible bronchoscopy include assessment of upper or lower airway obstruction; radiographic abnormalities such as persistent collapse/consolidation, atelectasis or hyperinflation; chronic cough with suspected aspiration or haemoptysis; and collection of airway samples including bronchoalveolar lavage, mucosal brushing or biopsy. Increasingly flexible bronchoscopy is used for assessment of smaller infants with upper airway signs or symptoms, where the child is allowed to spontaneously ventilate either under general anaesthesia or sedation, thus allowing dynamic assessment of the upper and lower airway anatomy. There is increased recognition that for children with chronic conditions such as cystic fibrosis, who are unable to expectorate lower airway secretions, that bronchoscopy with bronchoalveolar lavage is now the gold standard for airway culture. For areas of lung atelectasis, lavage with installation of mucolytics such as DNase can be both diagnostic and therapeutic.

There is increasing utilisation of flexible bronchoscopy in both the neonatal and paediatric intensive care setting. Bronchoscopy allows assessment of airway abnormalities, position of endotracheal or tracheostomy tubes, and the collection of specimens from specific areas of the lungs. Although rigid bronchoscopy is the investigation of choice for suspected foreign body, flexible bronchoscopy can be invaluable in assessment and treatment of distal lesions. The procedure can be performed in a matter of seconds and thus is amenable to even the sickest ventilated infants in intensive care.

Paediatric liver transplantation in Croatia: Outcome seven years after first transplantation

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Liver transplantation (LT) is one of the best examples of how modern medicine can successfully treat pediatric diseases that otherwise would be fatal. This is one of the best examples that emphasize the significance of multidisciplinary approach and team work in modern medicine.

Indications for pediatric liver transplantation are: extrahepatic biliary atresia (after unsuccessful Kasai procedure); cholestatic diseases (Byler's disease, Alagille's syndrome, biliary hypoplasia, liver cirrhosis as a consequence of alpha 1-antitrypsin deficiency, fulminant hepatitis regardless of etiology, hepatocellular carcinoma, liver insufficiency as a consequence of autoimmune hepatitis or of unknown etiology.

One third of children with biliary atresia and after Kasai procedure will end up with liver transplantation. It is possible to perform LT in a child of any age (and weight) but it is preferred in children after 12 months (more than 10 kg).

Pediatric LT team consists of several medical professionals - pediatricians specialists in hepatology, psychology, psychiatry, intensive care medicine, surgery (pediatric, vascular, abdominal), anesthesiology, radiology, pathology. Nursing team is extremely important, from nurse LT coordinator, to specialized nurses in intensive care and gastroenterology units.

After LT, children are treated in pediatric intensive care unit (PICU), usually up to 4 weeks, and after that on pediatric gastroenterology ward.

When discharged from the hospital, parents are fully educated and informed on treatment protocol, recognizing complications, etc. Their compliance is absolutely essential in determining child's outcome, with their nurse coordinator and pediatric hepatologist on call 24 hours a day.

First successful pediatric LT in Croatia was performed in Zagreb in our hospital on 2001.

From 2001 to 2007, in 14 Croatian children LT was performed; 9 were male and 5 female. 5 of them were aged 1-2 years, 4 were 3-7 years old, 3 were between 8 and 12, and 2 were 13 to 16 years old.

6 LT were performed from living related donors (2 from mothers, 3 from fathers, and 1 grandmother), 1 was done from living, unrelated voluntary donor, and 7 from cadaver donors.

Total of 10 children survived and left home from the hospital.

References:

1. [Taylor RM, Franck LS, Gibson F, Dhawan A.](#) Liver transplantation in children: part 1 - peri-operative issues. *J Child Health Care* 2005;9(4):256-73.
2. [Taylor RM, Franck LS, Gibson F, Dhawan A.](#) Liver transplantation in children: part 2 - long-term issues. *J Child Health Care* 2005;9(4):274-87.
3. [Bucuvalas JC, Ryckman FC.](#) Long-term outcome after liver transplantation in children. *Pediatr Transplant* 2002;6(1):30-6.
4. [Tiao GM, Alonso MH, Ryckman FC.](#) Pediatric liver transplantation. *Semin Pediatr Surg* 2006;15(3):218-27
5. [Muesan P, Vergani D, Mieli-Vergani G.](#) Liver transplantation in children. *J Hepatol* 2007;46(2):340-8.

SESSION 3: Free Paper

Nutrition to patients suffering from severe alcoholism – An interdisciplinary success story

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Background:

Many patients admitted to the medical gastroenterological ward are in a poor condition and are poorly nourished. This patient group has frequently a long history of alcohol abuse. The hospitalisation of these patients is often lengthened considerably and often complicated by infections due to their poor nutritional status. Their mental capacities are often affected to such an extent that they neither show an interest in nor are active in relation to their illness. These patients can show very little inclination to collaborate in the improvement of their nutritional status which can be a challenge to nurses both in regards to their own motivation and the effort involved. This can lead to them querying the amount of resources used of this particular group of inactive patients.

Objectives:

To share positive experiences with improving the nutritional status of malnourished patients with long-term alcohol abuse.

To demonstrate the many aspects of nursing involved in caring for these patients.

To demonstrate that it pays to use time and energy on this patient group.

Method:

Success was experienced in improving the nutritional status of an extremely malnourished during a 5-month hospitalisation. During this process many positive experiences were gained from individual, interdisciplinary and goal-oriented nutrition therapy. This motivated health care staff to increase their efforts with similar patients. The long-term treatment of four patients over the last two years has resulted in the accumulation of a great deal of experience and knowledge and armed staff with the belief that an improvement of the nutritional status of these patients is possible.

Results:

Using an individualised nutritional strategy four patients showing severely malnourishment on admission were successfully discharged with a much improved nutritional status.

During nutrition therapy both patients and health-care professionals will encounter difficult periods.

Implementation of various motivation strategies both in relation to the patient and health-care professionals is an imperative.

A goal-centred approach in relation to these patients has lead to an increase in knowledge and in interdisciplinary care to patients on this ward.

An awareness of the hospitalised patient's psycho-social status is of extreme importance as this has a bearing the continued success of nutrition therapy and advice after discharge.

Conclusion:

All health-care staff on the ward have become very conscious of the important role of nutrition. Nurses have acknowledged the challenges of caring for this group of patients but have seen that good results are possible. A heart warming story like to shows it is possible to help the most marginalised groups in society.

References:

1. Stratton R.J., Green C.J., Elia M. Disease-related malnutrition: An evidence-based approach to treatment. Danish summary. August 2003. Nutricia.
2. Sundhedsstyrelsen 2005. Vejledning til læger, sygeplejersker, social- og sundhedsassistenter, sygehjælpere og kliniske diætister. Screening og behandling af patienter i ernæringsrisiko.

Implementation of new technology in hepatic nursing through development of standard nursing care plan for Prometheus liver support treatment

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Implementation of a gastroenterological semi-intensive observation unit improves the quality of nursing in patients with Hepatic coma

Introduction: New technologies in hepatic treatment are developing rapidly and demanding new strategies for the nursing as well. Prometheus liver support is a new treatment and set of guidelines for the treatment and the specialized nursing in relation to the patients with liver failure were needed to insure a high level of nursing standard.

At Aarhus University Hospital, Danish patients, - suffering from acute liver failure, are offered a liver support treatment called Prometheus, which supports the liver and removes toxins until liver transplantation is available. In some cases the liver support is so efficient that the patient is regarded cured from the acute liver failure. The treatment is performed in collaboration between doctors and nurses. Each treatment has duration of approximately 8 hours and is often performed in series of 3 treatments. Patients are totally immobilized during treatment due to dialysis-catheters in v. Jugularis or v. Femoralis. Prevention of the risks during immobilisation is essential as is monitoring the patient's cerebral, renal, hepatic and nutritional status. Thus, both technical skills and specialized hepatic knowledge is needed for the nurses involved.

Aims: To implement tools to define, optimize, document and continuously improve the nursing skills in the field of liver support treatment.

Materials and Methods: Information retrieval from relevant databases: CINAHL, Cochrane library, PubMed, ScienceDirect, British Nursing, Blackwell Synergy and BMJ journals.

Results: No materials on nursing guidelines regarding Prometheus liver support were found. However, material on basic renal dialysis was added to our scientifically based knowledge about hepatic nursing and led to the development of a standard nursing care plan, including the Glasgow Coma Scale, individual nutrition plan and monitoring of urine and stools.

In addition, check lists for the nurses performing liver support were developed. Both tools have become an important part of the daily nursing and have led to a more exact definition and evaluation of patient needs.

Nursing staff, patients and relatives have appreciated the detailed and structured nursing care plan. Using the plan optimises the treatment by documenting the specialized nursing this treatment demands. During treatment, the nurse can more readily predict any approaching needs of the patient. Additional resources can be used to serve the individual needs of the patient or the technical aspects of the liver support.

Conclusion: The development of standard nursing care plans in the early phase of presenting new technologies is advantageous to staff and patients alike, insuring a high nursing standard.

References:

- Vizoso et al., Standardized Nursing Care Plan: A Case Study on Developing a Tool for Clinical Research, *West J Nurs Res.*2008; 0: 0193945907312976v1
- Cengiz, M.; Ranzenberger, J.; Johnson, D.S.; Killpack, A.K.; Lumpkins, R.W.; Pryor, T.A, Design and implementation of computerized nursing care plans, *Computer Applications in Medical Care*, 1983. Proceedings. The Seventh Annual Symposium on, Volume , Issue , 1983 Page(s): 561 – 564

Implementation of a Gastroenterological Semi-intensive Observaton Unit improves the Quality of Nursing in Patients with Hepatic Coma

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Introduction: During 2006 a Gastroenterological semi-Intensive Observation unit (GIO) was established in our department. Besides specific treatment guidelines, the implementation of GIO involved a more specific instruction to competent nurses on treatment of critically ill gastroenterological patients, especially patients with liver failure and hepatic coma.

Aims and methods: The aim was to evaluate whether 4 specific nursing parameters had improved after the introduction of GIO:

- Active enteral or parenteral nutrition within 72 hours of admission.
- Registration of possible decubitus ulcers.
- Achievement of soft stool.
- Arrangement of meeting and conversation with the patients' relatives within 72 hours of admission.

All patients admitted with hepatic coma in our department during 2004 – 2005 and patients admitted after the implementation of GIO from the beginning of 2007 until April 2008 were included in our retrospective study.

Results: 44 patients were included, of which 27 were before the implementation of GIO and 17 were after. Active nutrition was performed in 16 (54%) patients before GIO and in 16 patients after GIO (94%), $p = 0.015$; registration of possible decubitus ulcers in 11 (41%) vs. 7 (41%), $p = 1.0$; soft stool in 7 (26%) vs. 15 (88%), $p = 0.005$; a meeting with the patients' relatives in 13 (48%) vs. 10 (59%), $p = 0.194$.

Conclusion: The establishment of GIO shows a significant improvement in active nutrition and achievement of soft stool, both being among key nursing modalities in patients with hepatic coma. Additionally, although not statistically significant, better results were obtained for earlier communication with the patients' relatives. Registration of possible decubitus ulcers was the same in both groups and represents a field for improvement in near future.

Key messages:

1. Establishment of a GIO unit for hepatic coma patients raised the level of nursing on key parameters such as nutrition and obtaining a soft stool.
2. In order to achieve and sustain a high quality of nursing in critically ill patients with hepatic coma, we believe it is necessary to implement specific nursing guidelines in addition to specific treatment guidelines.

References:

1. Andreasen, Anna-Grethe Engelbrecht og Platen-Hallermund, Nete von: *Sygeplejebogen 2 Teoretisk-metodisk grundlag for klinisk sygepleje*. S. 291-301. 1. udgave, 1. oplag, 2003.
2. Kondrup J. Nutrition in end stage liver disease. *Best Pract Res Clin Gastroenterol* 2006; 20(3): 547-60

A prospective multicentre study on short and long-term complications of Percutaneous Endoscopic Gastrostomy (PEG) in Italy

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Introduction. Percutaneous endoscopic gastrostomy (PEG) is commonly used to allow enteral nutrition in patients with impaired oral intake of foods and fluids. Mild and severe complications may occur as a consequence of the use of PEG tubes.

Objective. To estimate the frequency of complications among the patients of 9 Italian centres.

Methods. All patients undergoing a PEG tube placement between August 1, 2006, and December 31, 2007 in the 9 centres and consenting to the research were prospectively enrolled in the study. They were followed for 6 months and vital status and the onset of complications were actively assessed by the gastroenterology nurses 1 week, 1 month, and 6 months after the tube placement procedure through a structured form. Mortality of patients after 6 months and the risk of various types of mild and severe complications at each time were calculated. Multivariate logistic regression was used to evaluate risk of death at 6 months associated with characteristics of the patients, of the tubes, and of the centres. The associations between the occurrence of complications at each time and characteristics of the patient, of the tube, and of the type of nutrition were assessed through Fisher's exact tests and, where possible, multivariate logistic regression.

Results. 297 patients were enrolled. Median age was 73 years. Swallowing impairment was the most common indication for PEG (80.5%). Laryngological occluding conditions (12.0%), oesophageal occluding diseases (4.7%), and face traumas (2.7%) were less common. 6-month mortality was 29.9%, most deaths (57.3%) occurring between 1 and 6 months after PEG tube placement. In multivariate analyses, the only factor associated with mortality was neoplastic comorbidity (OR=2.2, 95%CI: 1.0-4.7). The risk of complications, consistent with other studies (1, 2), was 19.6% in the first week after PEG tube placement, 17.0% from 1 week to 1 month, and 15.3% from 1 to 6 months. The most frequent complications at each time regarded the stoma. After the first month, the frequency of abdominal complications (e.g. nausea, vomiting) resulted greatly reduced, whereas complications regarding the tube (e.g. obstruction, breakage, deformation) resulted greatly increased as compared with earlier times. At all times, the risk of complications was significantly lower in patients using industrial preparations for enteral nutrition and in those using the pump system than among the others.

Conclusions. This is the first Italian study estimating the frequency of complications in patients with PEG tubes and identifying factors associated with increased risk, thus providing useful indications to nurses taking care of these patients. The finding that patients with industrial nutrition and pump delivery have less complications could serve for nursing scientific societies as the basis for reviewing their guidelines. Further research is needed to better characterize the complications and their risk factors and to explore additional aspects related to PEG such as quality of life of the patients. Given the relatively high mortality of patients with PEG, often due to their underlying conditions, careful patient selection is warranted by a multiprofessional team including gastroenterology nurses.

References

1. Ljungdahl M, Sundbom M. Complication rate lower after percutaneous endoscopic gastrostomy than after surgical gastrostomy: a prospective, randomized trial. *Surg Endosc* 2006;20:1248–1251.
2. Schrag S.P. et al. Complications related to percutaneous endoscopic gastrostomy (PEG) tubes. A comprehensive clinical review. *J Gastrointest Liver Dis* 2007;16:407-418.

Learning outcomes. Mortality in PEG patients was mainly affected by neoplastic comorbidity. The distribution of different types of complications varied with time and the frequency was lower when industrial preparations for enteral nutrition and the pump delivery system were used.

The Education of patients with home parenteral nutrition

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Introduction: On the ward we train 10 patients on a yearly basis in the use of total parenteral nutrition (TPN) given through a central venous catheter (CVC) at home. In The Netherlands there are two academic centres who provide this training. The patients need to use TPN due to intestinal failure. Our group of adult TPN patients is 60 out of a total of 120 nationwide.

The nutrition support team (NST) of the AMC is the practitioner in charge. The tasks of our medical ward are: to educate and train the patients, admit the patients when complications occur and function as a 24/7 back-up for patients when the NST is out of office.

The last couple of years we have seen a growth in the amount of these patients. The goal of the education and training is to give the patients tools to live an independent life with more quality. This is done by teaching the patients how to take care of their CVC, recognising and dealing with complications and to educate them about the effects on their social lives. Training is done by nurses who have had specialized training.

Aims: Improving the education of the patients and thereby increasing their independency and satisfaction (quality of care). Improving the competence and satisfaction of the nurses at the ward regarding training patients.

Methods: We evaluate the stay in hospital and the training with all patients using a standardised questionnaire. We had a group evaluation with TPN patients led by an independent conversation leader. In

Holland this is also known as a 'mirrormeeting'. We organize regular training for our nurses to keep their knowledge regarding the training of the TPN patients on a high level.

Results: Patients on the whole are satisfied with the quality of nursing but we aim to improve. The training of the nurses themselves is now standardized; a theoretical part of 2 hours, a practical part of 2 hours. The first time a nurse educates a patient she will be supervised by a nurse already experienced. In the near future a DVD and an interactive website will be made by the NST to support the patients. In the group evaluation patients told us that they are satisfied with the support of the ward during their stay and as a back-up function. The one thing they missed while being admitted was the possibility to keep themselves occupied while they were not training. Now the activity counsellor is actively involved.

Conclusions: The outcome of the different evaluations show that we give our patients a good quality of care but there is always room for improvement. Therefore we will continue to evaluate our care given. We have to anticipate on the (possible) growth of this group of patients. To educate this patient group gives our nurses an added value to their profession.

References:

1. The treatment of intestinal failure with HPN of children and adults. A.H.J. Naber et al. *Ned Tijdschr Geneesk* 2005, 149 (8), 385-390
2. Can home parenteral nutrition be provided by none specialised centres?: the Dutch experience. C.F. Jonkers et al. *Clinical Nutrition* 2005, 24, 526-527

Job stress and coping strategies in patients with subjective food hypersensitivity

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Objective: Subjective food hypersensitivity is a prevalent condition. In most cases its aetiology is obscure. According to Karasek's job strain model (1) and the Cognitive Activation Theory of Stress (2), job stress and coping strategies could play a role. We therefore hypothesized that subjective food hypersensitivity and its psychological and somatic co morbidities would be related to job stress, coping strategies and satisfaction with work environment.

Methods: Sixty-four patients with subjective food hypersensitivity were compared with 65 age and sex matched control persons from the general population. All participants filled out questionnaires focusing on job demands and decision latitude, psychosocial factors related to work environment, coping strategies used to solve problems, and subjective health complaints during the last month.

Results: Mean age of participants was 38 years, women were over-represented (83%). Compared with controls, patients scored significantly less on job stress ($P=0.01$) and job demands ($P=0.02$), and significantly higher on authority over job decisions ($P=0.04$). Coping strategies and satisfaction with work environment did not differ significantly between the two groups. Compared with controls, patients reported significantly more subjective health complaints and scored higher both on psychological distress and somatic co morbidity ($P=0.0001$), and these subjective health complaints were unrelated to job stress and coping strategies

Conclusions: The present results corroborate our prior findings of significantly increased scores on subjective health complaints in patients with subjective food hypersensitivity (3). Our hypothesis that a mismatch between job stress and coping ability could explain the patients' subjective health complaints was not verified.

Implication for practice: Patients with subjective food hypersensitivity have much psychological and somatic co morbidity (subjective health complaints) and impaired quality of life. Job stress and coping strategies do not explain the patients' food hypersensitivity or subjective health complaints.

References:

1. Karasek RA. Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly* 1979;24:285-308.
2. Ursin H, Eriksen HR. The Cognitive Activation Theory of Stress. *Psychoneuroendocrinology* 2004;29:567-592.
3. Lind R, Arslan G, Eriksen HR, Kahrs G, Haug TT, Florvaag E, Berstad A. Subjective health complaints and modern health worries in patients with subjective food hypersensitivity. *Dig Dis Sci* 2005;50:1245-1251.

SESSION 4: GE Patient Care

Nutritional risk factors among hospitalized gastroenterological patients

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Rationale: Undernutrition in hospitalized patients increases complication rate and mortality, and deteriorates life quality. Undernutrition and the accompanying consequences can be prevented if special attention is paid to nutritional care. During the past years, recommendations have been made to prevent and treat undernutrition. However, even when all recommendations for screening and handling of nutrition care are met, around 50% of patients admitted to a medical gastroenterology department are at risk of undernutrition.

Aim: The aims of the studies were to investigate nutritional risk factors among patients admitted to a medical gastroenterology department. Furthermore, to obtain knowledge of the patient's experiences of being undernourished and, to understand possible implications to nutrition intake and care.

Methods: The study was made in two parts.

Study I. Patients ≥ 65 years admitted to three departments during a 6 month period were consecutively screened for nutritional risk. Nutritional risk factors concerning nutritional status (weight loss within 3 months and disease activity, dentures, chewing problems, fungus of the mouth, constipation and anorexia), functional impairment (handgrip, walking- and shopping abilities), social and psychological factors (Katz index, Pfeiffer's test, help for eating, home care, meals on wheels and contact with family) as well as body composition (weight, length, BMI, triceps skin folds (TSF) and bio impedance (BIA)) were registered. Fishers and Mann Whitneys test were used for binary and ordinary data, $p < 0,05$ was considered significant.

Study II. A qualitative study based on semi structured interviews with patients in severe nutrition risk admitted to a department of medical gastroenterology. Patients were selected by qualitative sampling, and data were analysed using qualitative descriptive methods with condensation of meanings to themes.

Results: In study I, 233 patients were included. The following nutrition risk factors were found to be significant: Nutrition status: Weight loss, low triceps skin fold, fungus of the mouth, and chewing problems ($p < 0,05$). Functional impairment: Ability to walk, handgrip strength, and ability to shop for groceries ($p < 0,05$). Social and psychological impact: Depression and living facilities ($p < 0,05$).

In study II, 12 patients were included. A fear for life was associated with involuntary weight loss. The patient's considered stomach pain, loss of appetite and nausea to be the main reasons for not eating. Even though the pain made them not eat, and they were aware that they needed to eat to feel better; they did not consider asking the nurses for pain medication. The patients seemed to be divided into two groups. "An Active group" that was susceptible for motivation by goal setting, and "a passive group" who experienced severe fatigue and were therefore not compatible for motivation by the staff or others. Socially the patients felt support, but also pressure by their relatives.

Conclusions: Undernutrition has many physical and psychological impacts on the patients. An individual approach to the nutrition risk patient is found necessary in order to care for nutritional problems.

References

1. Rasmussen HH, Kondrup J, Staun M et al. Prevalence of patients at nutritional risk in Danish Hospitals. *Clinical Nutrition* 2003;22: 99
2. Kondrup J, Allison SP, Elia M, Vellas B, Plauth M. ESPEN Guidelines for Nutritional screening 2002. *Clin Nutr* 2003; 22: 415-21.

Nursing and Quality of life studies. What's the relevance to the clinic

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Background: The last Years the endpoints for clinical research in health related matters has shifted from not only measuring biomedical factors but also to measure factors that may involve other, yet important, aspects of the patients life. Several measurement tools and definitions has been introduced to clinical practice and nursing, but what is really the relevance of these studies for clinical practice.

Methods and aim: This presentation is partly based on literature review and partly on the lecturers own quantitative research in Inflammatory Bowel Disease. The aim is to describe the clinical use of Quality of life studies.

Results: By the beginning of september 2008 the PubMed database consisted of nearly 121000 hits for the term Quality of life, a formidable increase since the 1990's. If we reduce the term to only focus on

matters regarding health, also called Health Related Quality of Life, the hits is reduced to 18800. The numbers is still significant higher than that of the numbers for just a few Years ago. In gastroenterology, as well as in other patientgroups, the focus on HRQOL has grown even stronger. A selection of gastroenterological patientgroups in PubMed reveals this fact, as the following examples will show; Crohns Disease (103), Ulcerative Colitis (134), Hepatitis C (161), GERD (223), liver cirrhosis (98).

However; studies reveale that few of the HRQOL studies published in international journals define the meaning and contence of the term QOL or HRQOL. The problem seems to be that the terms are difficult to describe in a concrete way and that the definitions therefore is rather diffuse. I would like to postulate that HRQOL is a pearsons ability to view his or her´s mental, social and physical health in a positive way. In QOL research one just operates with the terms 1) high quality of life and 2) reduced quality of life – one never talks of absence of qualities in life. Most of the studies of HRQOL in gastroenterological diseases investigated with, for instance, Short-Form 36 (SF-36), do not focus on how to use the results in clinical practice, nearly on the decline in HRQOL itself. For the nursing profession, it is my belief, that this gives little, or no, meaning in the actual clinical setting. But can the results be used? The answer is an absolute Yes. HRQOL research may, for instance, be a help in identifying and forming the basis for preventive interventions directed against vulnerable population groups. For the nursing profession this gives the oportunity to alter the parameteres by focusing on “what the patient is concerned about” i.e in focus groups or interventions directed to help the patients to cope with chronic diseases. Areas of interest may be in 1) Health and physical functioning (i.e. sexuality), 2) Psychological and spiritual (i.e selfimage), 3) Socioeconomic (i.e education and social support) and 4) Family (i.e wife/husband/children).

Conclusion: QOL and HRQOL studies are of clinical importance. The main focus must however be on how to translate reduction in QOL into clinical action to prevent reduction.

Self-help intervention as a neglected treatment alternative for functional GI disorders

Michael A Kamm, Professor of Gastroenterology, St Vincent's Hospital and University of Melbourne, Melbourne, Australia and Imperial College, London, United Kingdom.

The traditional medical model is based on the belief that there is a drug or operation that will relieve or cure most disorders. The published evidence suggests that alternative forms of treatment are much more likely to produce long-lasting symptom relief for many patients with these disorders.

Such treatments include behavioural or psychologically based therapies. Behavioural treatment to relieve constipation, or hypnotherapy for pain, are just two examples of treatment in which the patient is empowered to take control of their gut function. Such treatment is associated with improved locus-of-control when associated with symptomatic improvement. Other forms of therapy that may be helpful are books and information, relaxation training, and psychological therapy.

Food is also of interest to patients with functional gut problems. While milk intolerance is poorly substantiated, avoidance of excess fibre can help decrease bloating. Recent evidence suggests that gluten sensitivity may be important in the absence of overt celiac disease, in certain genetically-susceptible individuals. Food elimination diets based on immunological markers may also have a place. Lastly, probiotics are likely to modify visceral sensitivity, and have been shown in controlled trials to decrease pain.

Successful practice in these disorders requires an open-mind, provision of information, and the development of a multidisciplinary approach and team.

The problem of colon preparation in elderly patients – a literature review and everyday working experience

Patricia Burga, Azienda Ospedaliera di Padova, Italy

An analysis of literature on nursing aspects of colonoscopy or, more in general, of endoscopy is not easy. Medical articles are oriented to clinical and medical findings and procedures but rarely they are concerned about the causes of complications.

The same definition of elderly patients is not always shared: usually we can find two different cut off points at 65 or 75 years of age and sometimes 80 years old.

There are not age specific difficulties but an increased frequency of the most common complications and a lower rate of completed procedures. Not adequate bowel preparation, concomitant drugs, clinical status tends to generate anxiety; sedation can help but there are pros and cons. The ability of the endoscopist in performing the procedure is a relevant advantage.

The focal point is how to manage the anxiety, understanding the uncomfortable situation the patient is in after the bowel cleaning preparation. Nursing ability is the holistic care of the patient that is something we should really experience and not only relegate it to books.

References:

1. American Gastroenterological Association (2007, May 24). Flaws In Colonoscopies May Increase Risk Of Colon Cancer. *ScienceDaily*
2. Karajeh MA, Sanders DS, Hurlstone DP.
3. Colonoscopy in elderly people is a safe procedure with a high diagnostic yield: a prospective comparative study of 2000 patients.
4. *Endoscopy*. 2006 Mar;38(3):226-30.
5. Ure T, Dehghan K, Vernava AM 3rd, Longo WE, Andrus CA, Daniel GL.
6. Colonoscopy in the elderly. Low risk, high yield.
7. *Surg Endosc*. 1995 May;9(5):505-8.
8. de la Mora G, Marcon NE.
9. Endoscopy in the elderly patient.
10. *Best Pract Res Clin Gastroenterol*. 2001 Dec;15(6):999-1012. Review.

SESSION 5: Free Paper

Preparation for colonoscopy in hospitalized patients

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INTRODUCTION:

Successful colonoscopy depends on adequate cleansing of the colon before the procedure. Inadequate preparation will lead to cancellation of the procedure and a new appointment

This compromises patient safety and decreases quality of care and cost effectiveness.

AIM:

- To isolate factors that affect successful preparation, especially in older, severely ill and bedridden patients.
- To examine the possible differences in quality of preparation between ambulatory and hospitalized patients.
- To evaluate the impact of a staff education program on the preparation of hospitalized patients for colonoscopy.

METHODS

407 consecutive patients (303 ambulatory & 104 hospitalized) referred for colonoscopy in 2002, and 415 consecutive patients (310 ambulatory & 105 hospitalized) referred for colonoscopy in 2003. A questionnaire consisted of 7 sections prepared for each patient. Nurses completed details concerning demographic data, comorbidity and type of preparation. Gastroenterologists performing the colonoscopies completed details related to quality of preparation and colonoscopic findings. All patients completed a questionnaire relating to satisfaction. Between the two periods, hospital staff received an education program to improve colonoscopy preparation. Comparison of all parameters between the two groups and between time periods was performed.

RESULTS:

Comparison by group:

Hospitalized patients were older, more dependent, and had more chronic diseases than the ambulatory patients. Polyethylene glycol was used significantly more often for colonoscopy preparation in hospitalized patients than in ambulatory patients (53.1% vs 8.8%, $p=0.0001$). The hospitalized group was characterized by more incomplete and repeat colonoscopies, less adherence to preparation instructions, and more cases of poor preparation.

Comparison by time period:

The education program had no impact on quality of preparation. Rates of complete colonoscopy, repeat examination, and poor preparation, before and after education program, were 80.9%, 19.0% and 31.1% versus 80.7%, 19.2% and 31.1%, respectively (table 1). Patient satisfaction score was higher in the ambulatory group than in the hospitalized group, 90% versus 79.4% respectively (p=.0001)

SUMMARY

Hospitalized and ambulatory patients are selected population with differences in age, levels of dependence and prevalence of chronic diseases. More hospitalized patients received more polyethylene glycol for preparation. The preparation was significantly more effective in ambulatory than hospitalized patients. An intervention program for hospital staff had no impact on the quality of preparation.

CONCLUSION

Preparation for colonoscopy in hospitalized patients should be improved. This may be difficult because many patients have significant co-morbidity and bedridden. Current preparation methods in severely ill patients need to be revised to account for the specific problems in this group.

Total quality management in Gastrointestinal endoscopy nursing assessment of patient's appropriateness for sedation-free colonoscopy

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Introduction: Colonoscopy represents a valuable procedure in diagnosing pathology of the colon. Several risk factors for difficult colonoscopy have been recognised. Regarding patient, predominant factors are age, sex, pre-procedural anxiety and history of previous intra-abdominal surgical operation, whereas poor colon preparation, duration of the procedure and less experienced endoscopists are most prominent technical factors. As majority of colonoscopies in Croatia are performed without sedation, patient satisfaction and completeness of the procedure might be unsatisfactory, affecting its quality.

Aims: As part of quality management program, analysis of practice at our institution was done in a prospective manner. Attention was given to patients' characteristics which influence the successfulness of sedation-free colonoscopy.

Method: Routine practice was monitored during a period of three months. Colonoscopy was offered to all patients, exclusion criteria being only colonoscopy done within past 6 months and unsigned informed consent. The colon preparation was the same for all patients. All Colonoscopies were sedation-free and performed by skilled endoscopists (>200 procedures annually). All patients were interviewed with a prepared questionnaire. Demographics, anthropometrics and medical history were collected prior to procedure, duration of the procedure was recorded, and patients' feeling of pain was assessed on visual analog scale from 1 (no pain) to 5 (worst pain). Colon preparation was assessed on a semi-qualitative scale: excellent (no stool), satisfactory, poor, bad (formed stool preventing passage).

Results: Colonoscopy was offered to 250 patients, of whom 125 were inpatients. Mean age of patients was 57.8 years (+/- 14.7), and there were 46.6% female patients. A total of 181 colonoscopies were successful (72%). The main reasons for premature ending of the procedure were poor preparation (36/69 pts, 52%) and pain (32/69 pts, 48%). Poor preparation was noted among 10% of inpatients (12/125), and 20% of outpatients (24/124). Multivariate regression analysis indicated female sex (OR 2.59 CI 95% 1.31-5.09), and thinner waist (OR 0.97 CI 95% 0.95-0.99) as predictors of pain, as opposed to history of abdominal surgery (OR 0.20, CI 95% 0.06-0.69) which was predictor of tolerability.

Conclusion: Our study confirmed recognised reasons for unsuccessful colonoscopy: inappropriate colon preparation and pain. Female sex and thinner waist were predictors of pain, whereas previous colon resection was predictor of tolerability. These attributes are now part of pre-procedure assessment of a patient's appropriateness for sedation free-colonoscopy. Furthermore, as part of quality management, several activities were set up aiming to improve the quality of service: leaflets and instructions for colon cleansing were reviewed, and the procedure is orally explained to patients. For older inpatients (>75 yrs) and those with impaired mobility, duration of cleansing was prolonged from 2 to 3 days. These activities will require further evaluation during a determined future period with the objective to increase the colonoscopy success rate over 70%

Learning/outcomes: 1. Nurse has a proactive role in pre-procedure assessment of patients in assessing the risk of pain; 2. How good are we?, Is the colonoscopy success rate of 70% good enough?

Key words: endoscopy, colonoscopy, nurses, sedation

References:

1. Ristikankare M, Julkinen R, Mattila M et al. Conscious sedation and cardiorespiratory safety during colonoscopy. *Gastrointest Endosc*, 2000;52:48-54.
2. Reimann Fm, Samson U, Deral I et al. Synergistic sedation with low-dose midazolam and propofol for colonoscopies. *Endoscopy*, 2000: 32:239-44.

Targeted intervention for education patients in the gastroenterology unit

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Introduction: Various procedures are performed in the Gastroenterology Unit for diagnosis, early detection and treatment; including invasive procedures for which prior preparation at home is essential. For a majority of outpatients the examinations themselves are a cause for confusion, fear, embarrassment and modest increases in anxiety as are the expected results (Jones, 2004). Patient education mediating the stress experience by reducing their perceived anxiety (Eberhardt, 2006) have become an integral part of the pre-procedure preparation.

Aims :To evaluate patient satisfaction regarding the guidance they received; To examine the quality improvement activities (i.e. the intervention)

Methods: Using convenience sampling we conducted three surveys. The first took place prior to the intervention in 2005 (N=98). Two additional surveys were undertaken following the intervention: in 2006 (N=112) and in 2007 (N=101). The survey population included patients who underwent various procedures in the Unit. A questionnaire was used to evaluate patient satisfaction of the guidance provided in the Unit prior to each of the procedures. The survey tool included 24 questions and was meant to be completed anonymously by the patient prior to being discharged home. The questionnaire evaluated on different levels: patient satisfaction from the guidance for example: nutritional instruction; complications; the manner in which the procedure was performed; pain, and the like. Additionally, the questionnaire included personal demographic details.

Results: In general, the results of the primary questionnaire (prior to the intervention) showed that approximately 70% of the patients were very satisfied from the guidance, yet they felt that there was room for improvement.

The Intervention: As a result of the survey's findings, a number of quality improvement activities were initiated aimed at training the unit's nursing staff to provide unified and structured guidance e.g. workshops in patient education which included simulation exercises, workshops to improve staff knowledge including questionnaires to identify the staff's knowledge, preparation of informational pamphlets for the staff and the preparation of tools for implementing and documenting the guidance. So too, there was a change in nursing work methods including: assigning a nurse to each stage of the guidance.

In parallel, patient informational handbooks were prepared for each of the procedures performed in the Unit. These handbooks which were provided to patients at the time of test scheduling were also accessible to the public on the Hospital's website.

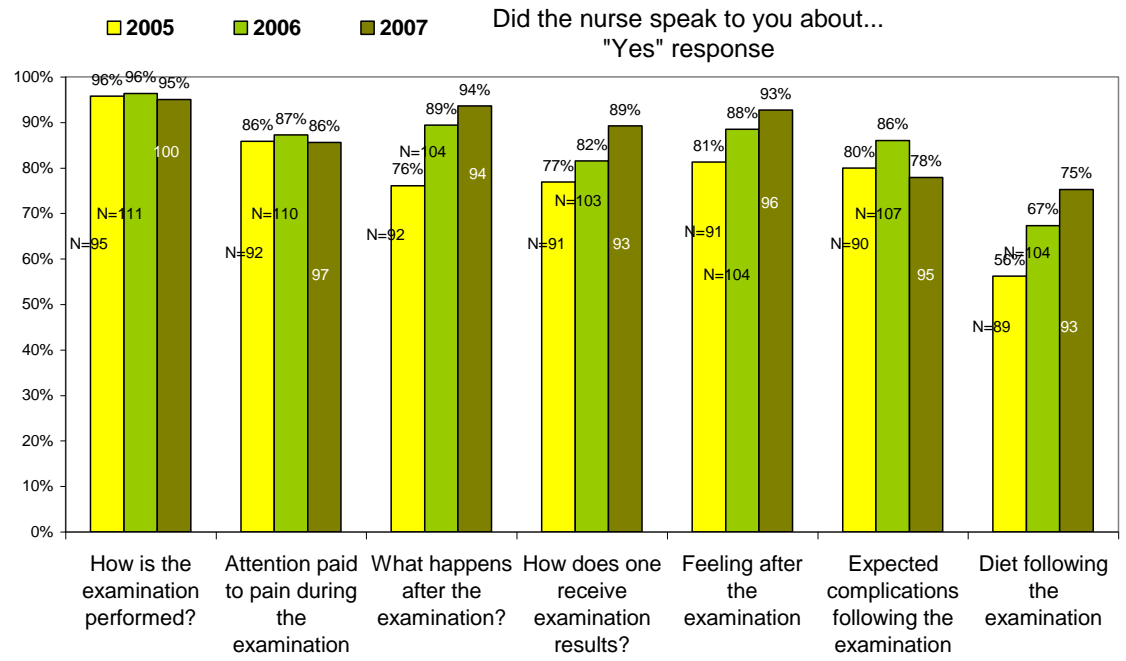
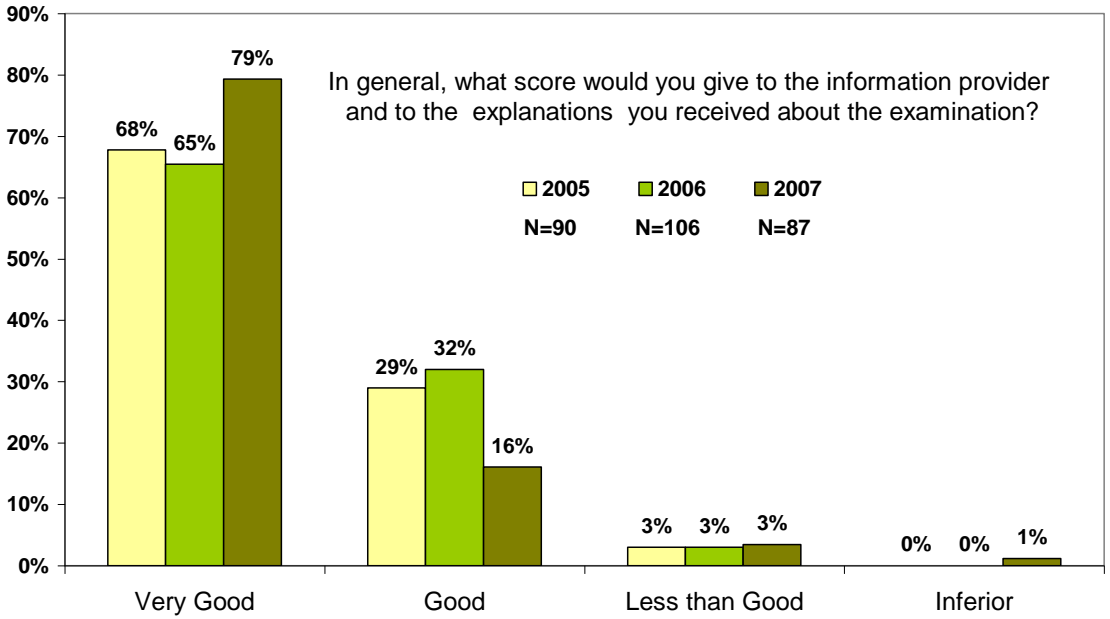
Results: In evaluating patient satisfaction from the guidance following the intervention in the two additional surveys, it was found that there was a certain degree of improvement in most measures checked e.g. in the first survey, 76% of the patients noted that they received information regarding what would happen following the test. In the second survey 86% noted that they received this information and in the third survey 94% noted that they received this information.

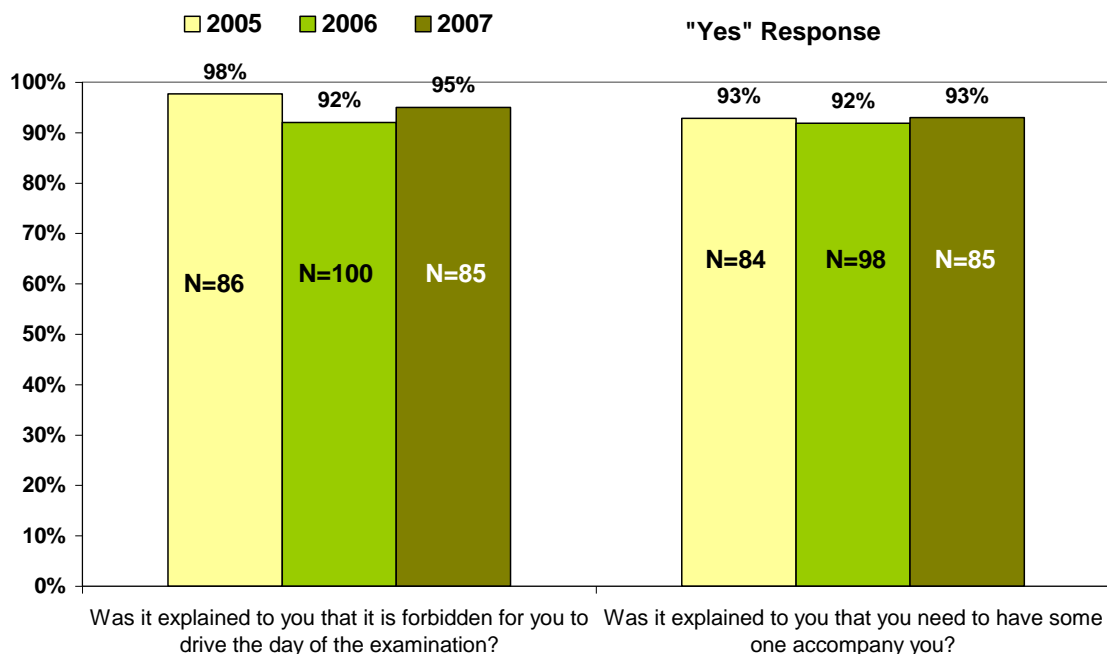
Conclusion & recommendation:

The findings of the surveys reflect the fact that investing in staff development, providing tools which are uniform and structured, and changing work methods contribute to improved patient satisfaction from the guidance received.

References:

1. Jones, M P , Ebert C, Sloan T et al. Patient anxiety and elective gastrointestinal endoscopy. *Journal of Clinical Gastroenterology*. 2004;38(1):35-40
2. Eberhardt J, van Wersch A, van Schaik P, et al . Information, social support and anxiety before gastrointestinal endoscopy. *British Journal of Health Psychology*. 2006;11(4) 551-9.





Hepatitis C – Knowledge assessment among nursing hospital staff

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Introduction: Hepatitis C virus (HCV) is the main indication for liver transplantation.

Its prevalence in the general population is 1%. In most cases, the infection has no clinical symptoms. Exposure to this infection disease requires extensive knowledge regarding the etiology, risk factors, prevention of spreading among patients and medical staff.

Objective: To examine the knowledge about HCV among Israeli hospital nursing staff. A steering committee will use these examination results to build an intervention program in order to qualify the staff.

Methods: A questionnaire was spread among hospital internal and surgical departments nursing staff. The questionnaire included 20 questions regarding general knowledge of HCV, its risk factor, epidemiology, and prevention. Some other question examined the specific education given to patients and medical staff, and demographic details of the participator.

Results: Seventy participators answered the questionnaire; there were 7 males and 63 females. Their educational status was distributed as follows: 34% percent were registered nurses, 54% were BA, and 12% were MSC. Fifty-five percent underwent advanced qualification and 20% had management position. The average period of service was 13+_12 years (range 1-36 years). Distribution between internal and surgical departments was equal. Analysis of answers revealed a lack of knowledge among the medical nursing staff in few subjects regarding HCV: 40% failed the HCV general knowledge questions, 20% were not aware of the risk factors, and 20% of the participators were wrong about the prevention ways. The most problematic subject was patients' guidance. The more experienced nurses (>10 years) showed significantly less knowledge than younger nurses. There were no differences between nursing staff of internal and surgical departments.

Conclusions: Lack of a vaccine and prophylactic treatment for HCV requires development of education and advisory programs in order to reduce the viral spread among high risk populations, and minimize chronic liver disease among infected patients. The role played by the nursing staff in reducing viral spread and minimizing chronic liver is important. Therefore an education advisory program should be encouraged.

References:

1. M .Dolan (1997) Hepatitis C: a bloody business. Infection control 45,71-72
2. JG Mchutchison (2004) Management Issues in Hepatitis C Infection. 88-91
3. Van de Mortel TF (2003) Registered and enrolled nurses knowledge of hepatitis C and attitudes towards patients with hepatitis C. National Library of Medicine: 16(1-2) 133-144

4. Amy B. Jessop, Chari Cohen, Monika M. Burke, Moli Conti and Martin Black (2004). Hepatitis Support Group: Meeting the Information and Support Needs of Hepatitis Patients. *Gastroenterology Nursing* (27) 4, 163-169.
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Ergonomics in digestive endoscopy

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Digestive endoscopy have brought many benefits to the patients. However, we must see some important aspects from the worker's perspective. Even though the digestive endoscopy just take a short scheduled time, it can cause some injuries in personnel. In our endoscopy unit, we have many complains from physicians and nursing staff members, such as neck pain and low back pain. Moreover, they said that this complains are very common due to position in which they have to maintain during the procedures, sometimes demanding flexion contractures and joint motion. Besides, nursing staff have specific complains, such as carrying too much weight during their activities, like stretchers and video equipments.

Aims: The purpose of this study was to evaluate working conditions in our endoscopy unit, and eventually to implement some improvements.

Method: At first, we took some notes about the staff most common physical complains. After that, we asked a physical therapist to search into our unit about bad working conditions, or other conditions which might cause some harm.

Results: The results were surprising. We realize that several changes in our working environment must be done. Since we cannot change the number of patients attended, neither our equipments, the physical therapist give many suggestions and improvements, as well as an exercises program that our staff should consider, in order to prevent injuries. Simple solutions, like small adjustable feet supports could provide relief to the most common complains. Moreover, the physical therapist suggested stretching movements in order to preserve muscle strength and avoid discomfort.

As a result of this study, we have learned that for maximal benefit, workers must take a commitment to maintaining the program at endoscopy unit. Some of this exercises and adjustable supports are very simple to apply. One additional thing that we have learned from this study is that even though the physicians cannot avoid some repetitive grasping or rotatory motions during the endoscopy procedures, we can prevent fatigue and pain, just acting in accordance to ergonomic adjustments.

References:

SOBED. Endoscopia digestiva diagnóstica e terapêutica. Ed 1, Revinter, São Paulo, 2005, 740p.

MULLER, S; LAGEMANN, RC. Enfermagem em endoscopia digestiva. Ed 1, Medsi, Rio de Janeiro, 2001, 352p.

Learning outcomes: In order to improve quality of life in working environment, we have to adjust some equipments and routines in digestive endoscopy. Otherwise, we can have many labourer absenteeism. Prevention of workers diseases is always a good manager strategy. Also, from what we gather, the activities we have in endoscopy unit can be very demanding, thus this program established by the physical therapist is a helpful proposition.

Reprocessing of endoscopic equipment – a survey in European countries

Ulrike Beilenhoff, Ulm, Germany

Several European guidelines have been published covering hygiene and infection control in Endoscopy (1-3). These guidelines should be adapted to national guidelines and / or to unit specific protocols for reprocessing. In 2000 a survey evaluated the reprocessing of endoscopic accessories in Europe (4).

Aims: The aims of the survey were to evaluate the compliance with European guidelines and to compare data from different European countries and to identify any changes between 2000 and 2008.

Method: A questionnaire was developed focused on national practice, not on specific departments.

Results: The questionnaire was sent to all ESGE and ESGENA membership countries (44 countries). 26 responded (59.1%). In 16 of 26 countries (61.5%) a variety of national guidelines were established covering reprocessing of endoscopes and accessories, staff protection measures and periodic microbiological tests. 10 countries (38.5%) had no national guidelines, but adapted American (2) or European guidelines (8) to unit specific protocols. In 9 countries (34.6%) the majority of endoscopy departments used automated washer-disinfectors (WD) for endoscope reprocessing only. In 15 countries (57.7%) both, manual and automated systems, were used. In 2 countries (7.7%) endoscopes were reprocessed only manually. Recommendations for reprocessing of accessories varied greatly from country to country. Microbiological surveillance was recommended in 17 countries (65.4%), but with great variations in the protocols. Specific training of staff was recommended only in 13 countries (50%).

Comparing the data from 2000 and 2008, only a few changes could be identified. Evan Aldehydes are still the most used disinfectants with 80.4%, the use of alternatives increased significantly: PAA from 26% to 61.5%, electrolytically generated disinfectants from, 8.7 to 15.4%. Automated reprocessing cycles are established in more countries. In 15 countries (60%) current national guidelines clearly recommend the use of WD for endoscope reprocessing. A trend to single use accessories can be identified, 11 current national guidelines (42.3%) recommended the use of single-use accessories.

Summary & Conclusion: The survey showed that all countries adapted the European guidelines into their national guideline. Many national variations were apparent, especially in reprocessing of endoscopic accessories and in microbiological surveillance. There is a need for staff education in automated reprocessing of endoscopes, in standardised reprocessing of accessories, in staff protection measurers and in the performance of regular quality control in order to establish the European standards.

Learning outcomes: The conference participants will be aware of the variety of recommendations in Europe, will be able to compare their national guidelines with other countries, and will get input for possible improvements in their countries.

References:

1. ESGE/ESGENA guideline for process validation and routine testing for reprocessing endoscopes in washer-disinfectors. Endoscopy 2007; 39: 85-94
2. ESGE/ESGENA guideline for quality assurance in reprocessing: Microbiological surveillance testing in endoscopy. Endoscopy 2007; 39: 175-181
3. Guidelines on Cleaning and Disinfection in GI Endoscopy. Endoscopy 2000; 32: 76-83
4. Beilenhoff U. Reprocessing of endoscopic equipment in Europe – an overview. Oral presentation at the ESGENA Conference 2000 in Brussels

SESSION 6: Psychology

Stress Management in Endoscopy

George Brownstone, Vienna, Austria

The nature of stress is discussed, and its causes and effects, especially in health care. Stress emanates from three sources in endoscopy: the individual health care worker, the endoscopy team, and the patient. Emotional states are communicated primarily non-verbally and perceived by others, who then feel those same feelings, by virtue of the brain's mirror neuron system. Thus, undue stressful feelings can overshadow the work environment, to the detriment of the individual worker, the work, and the patient. Strategies are presented to prevent stress from becoming disabling, with emphasis on the team aspect of endoscopic work. These include maximizing individual and team competence, practice together, and maintenance of a quietly professional attitude in dealing with the patient.

New Modalities to explore the central nervous system

Johann Hammer, Vienna, Austria

Gastrointestinal symptoms can result from a diseased or malfunctioning gut, but also from dysregulation at any level of the gut control mechanism including the entire brain-gut axis up to the cerebral cortex. Methods to study the central nervous system involvement in gastrointestinal symptoms have initially been developed for neuropsychological research; meanwhile these methods have also been introduced into GI research. They have allowed to study, on the one hand, the response of the gut to brain stimulation by a method called Transcranial Magnetic Stimulation, and, on the other hand, the response of the brain to gut stimulation, with techniques such as functional Magnetic Resonance Imaging (fMRI), Positron Emission Tomography (PET), or others.

fMRI is based on the fact that during spurts of neuronal activity the regional blood flow increases; that leads to a net increase in oxygenised haemoglobin. This oxygenised haemoglobin in turn leads to an increase of the MR signal as the direct haemodynamic response to neural activation. Several studies have nicely shown that during intestinal stimulation, for instance by distending a balloon in the rectum, several areas in the brain including thalamus, the insular cortex, the anterior cingulate cortex and the prefrontal cortex are involved in processing this peripheral stimulus.

PET is somewhat similar to fMRI, as it also measures changes in regional cerebral blood flow and brain function upon activation of neurons. A radiolabeled tracer is intravenously injected and PET measures the

concentration and distribution changes of the radiotracers in the brain tissue, that correlates either with changes in regional neuronal metabolism (18FDG) or regional cerebral blood flow (radiolabeled H₂O). In the future, however, brain imaging will not only be descriptive but it might also allow to improve the diagnosis of gastrointestinal disorders, guide treatment, predict response to treatment and allow follow up during or after treatment.

SESSION 7: Education

Experience with the European accreditation system of UEMS

Michael Jung, Mainz, Germany

The European Union of Medical Specialists (EUMS) – Union Européenne des Médecins Spécialistes (UEMS) was founded in 1958 and represents the official body of all medical specialists to the European commission. The UEMS is composed of working medical specialists who are delegated by the professional bodies of their own countries. The organisation consists of an executive committee of more than 34 specialists sections, among these the section of gastroenterology. The section is composed of 2 delegates of each of the member countries. In 1992 the European Board of Gastroenterology was founded as a working party composed of further 2 delegates per country, one from the section and one from the national gastroenterology society to provide a balance between clinical and academics.

The objectives of the UEMS is the study and promotion of the highest level of training of the medical specialists, medical practice and health care within the European Union, and allowing the free movement of specialist doctors within the European Union.

A primary function of UEMS section and board of gastroenterology is to define and secure the standards of training of gastroenterology to make suggestions for continuing medical education and quality assurance and to organize an exchange of trainees. To improve the quality of gastroenterology training the EBG accredits well trained gastroenterologists and certifies training centres from the UEMS countries. EBG recommends a 6 year period training for gastroenterology. This training should include 2 years of internal medicine (common trunk) and at least 3 years of full time clinical training in gastroenterology (for further information see the blue book <http://www.eubog.org>).

Candidates who fulfil the requirements will be awarded the certificate of fellowship of the European Board of Gastroenterology and can call him-/herself **Fellow of European Board of Gastroenterology**.

To ensure the quality of a training centre the EBG encourages visitation of training centres. To be effective, inspection of a centre is conducted by 2 external assessors nominated by the board of gastroenterology. Fulfilling all EBG requirements the diploma will be issued to the centre, approving it as a **Training Centre of the European Board of Gastroenterology**. Training in Gastroenterology should be based in university or university affiliated institutions, those with an equivalent education and research program and the full complement of medical, surgical and diagnostic service of a university hospital (For further details look also <http://www.eubog.org>).

In 2007 the European Gastroenterology Federation (UEGF) and the UEMS section and board of gastroenterology agreed to collaborate in regard to the **CME accreditation process** for the future. Credits are based on the European Credit System (ECME) proposed by the European Accreditation Council (EACCME) body of UEMS. Credit system is based on the one hour of education activity (a maximum of 3 credits for half a day and 6 credits for full day events). The CME procedure includes the review of the objectives of the scientific activity, a program review, the provider disclosure of conflict of interest and a description of the policies relating to commercial interest. A joined committee of UEGF and UEMS gastroenterology members evaluates the scientific event and issues the certificate of CME accreditation incorporating the UEMS logo.

Inflammatory Bowel Disease - The value of nurse education

Irene Dunkley, Huntingdon, UK

Inflammatory bowel disease (IBD) includes both ulcerative colitis (UC) and Crohn's disease (CD), they are chronic conditions of the gastrointestinal tract (GI), affecting 5: 100,000 of the population with peak age at onset at 15 – 25 years of age. The exact cause of IBD is unknown, it is thought to have genetic factors, autoimmune factors, collagen disorders, food allergies, the onset can occur after a gastrointestinal infection.

IBD is a complex condition with the need to manage disease symptoms and monitor medical treatment such as immunosuppression agents.

Patients with this condition benefit from the care of specialist nurses whose knowledge and support are a key part of their integrated care of patients between primary and secondary care providers.

In the United Kingdom specialist nurses began to be appointed in the mid to late 1980's at around the time nurse endoscopist roles were being developed.

At that time education specific for IBD nurses roles was limited with one course in London. Education was mostly achieved by nurses accessing medical courses or conferences to gain insight into the management of patients and applying nursing skills to patient care. Today university courses are available to provide nurses the necessary educational qualifications – but is this enough?

When developing new roles we need to consider a number of key areas:

- Patient needs.
- Service needs.
- Individual nurse needs.
- Measurement of improvement and benefit to patient care.
- Cost effectiveness.

It is clear that management, senior nursing and medical support are necessary if the nurse specialist service is to be successful. This success also requires access to appropriate education courses for the nurse specialist to achieve understanding and increase knowledge to provide safe patient care.

This presentation will explore the area of practice and knowledge needed for nurses specialising in IBD in order for them to provide safe, improved patient care whilst also being cost effective.

Nurse endoscopists in the UK

Pauline Hutson, Sheffield, UK

In 1994 the role of the nurse endoscopist was developed in the United Kingdom. This innovative development coincided with new legislation reducing the number of hours, which junior doctors were allowed to work and was therefore regarded as a means of sustaining the required workload by utilising existing staff. The British Society of Gastroenterology supported the initiative and published a working document outlining the roles and responsibilities of the 'Nurse Endoscopist' (BSG 1994). This unique shift in traditional roles has been extremely challenging and has been proven as safe and acceptable practice, (Durai et al 2005). Over the past decade the role of the nurse endoscopist has developed further into more specialised fields of gastroenterology such as inflammatory bowel disease, colo-rectal cancer screening, family history and anaemia. These additional roles have enhanced services for patients by providing a more holistic approach whilst simultaneously providing a quicker access to a health care professional. More importantly these transitions have encouraged academia and ensured that the role is not reduced to a technician's status. Research, evidence based practice and academic training at degree, masters and even PhD level has ensured a high quality of expertise, which embraces a broad range of skills and knowledge.

In recent years the increasing demands brought about by the National Bowel Cancer Screening Programme has placed added pressure on endoscopy services within the United Kingdom. In an attempt to utilise the nurse endoscopist's role to the maximum a National Nurse Endoscopist Project was undertaken at the end of 2007, which identified the existence of 349 nurse endoscopists in England alone. The project has subsequently commissioned the national training centres to provide a series of training

programmes for nurse endoscopists aimed particularly at therapeutic endoscopy and removal of polyps. This huge response to support the development of the nurse endoscopist clearly demonstrates the success and strength of the role and ensures a sustainable future for this ever developing service.

References

1. British Society of Gastroenterology (1994) The Nurse Endoscopist
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Nurse endoscopist in Sweden – education and prospects.

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Nurse endoscopists perform as well as doctor endoscopists in OGD endoscopy and flexible sigmoidoscopy according to the British MINuET trial (1,2). Full colonoscopy has replaced the traditional barium enema as the diagnostic method for colonic disease and for screening purpose in Sweden. Hence, the number of full colonoscopy examinations has increased each year and will reach 35 000 in Stockholm county in 2008 based on a population of 1.9 million. The number of endoscopists must increase accordingly. Nurse endoscopists for diagnostic and screening colonoscopy meet this demand. This report details the education programme at Ersta Hospital and Ersta Sköndal University College, the first in Sweden to educate nurse endoscopists.

Education. The first course started in November 2006 and runs over two years making up 60 points according to the Bologna document. The admission stipulation is at least three years experience as an endoscopy nurse. The curriculum provides competence in gastroscopy only or both gastroscopy and colonoscopy. Colonoscopy alone is not an option. There are seven three day lecture sessions comprising theory and seminars. Student support is provided over the Internet. Four essays of 3000-5000 words, fully referenced from current literature, are submitted electronically. The clinical training is done at the home hospital comprising at least 150- 200 supervised endoscopy examinations of each type. The course director assessed the training sites. A final theoretical and practical examination is included.

The current course comprises ten women and two men, age 34-52 years with previous experience of endoscopy 7- 20 years. They represent different parts of Sweden. Ten students choose both gastroscopy and colonoscopy while two students opted for competence in gastroscopy only. The education will be completed in November 2008. The course price is approximate €4500 to which will be added salary, travel and living costs, in all instances paid by the respective employer.

Comment. What is the future contribution of these nurse endoscopists? Judging from the clinical work of the two first, British educated nurses, the prospects are good. In 2007 these two nurses did some 1200 colonoscopies and 800 gastroscopies, which amounted to 21 % of all colonoscopies and 12% of all gastroscopies performed at Ersta hospital. The nurse endoscopist is present full-time in the endoscopy unit and can perform all tasks, including replacing any absent physician endoscopist plus educating junior doctors and nursing staff. In short, perform all relevant functions, with the exception of therapeutic endoscopy beyond simple polypectomy.

References:

1. Williams J, Russell I, Durai D, Cheung W-Y, Farrin A, Bloor K, Coulton S, Richardson G. What are the clinical outcome and cost-effectiveness of endoscopy undertaken by nurses when compared with doctors? A Multi-Institution Nurse Endoscopy Trial (MINuET). *Health Technology Assessment* 2006;10:No. 40. <http://www.hta.ac.uk/fullmono/mon1040.pdf>.
 2. Verschuur EM, Kuipers EJ, Siersema PD. Nurses working in GI and endoscopic practice: a review. *Gastrointest Endosc* 2007;65:469-79.
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ESGENA Statement of Nurse endoscopists

Christiane Neumann, Birmingham, UK

Over the last 20 years nursing practice has advanced to include traditional medical roles.

In the UK formalized training has been available for nurse endoscopists for the last 10 years. The professional motivation for nurses to develop this role was provided by their regulatory body (UKCC). The service need incentive for this was to reduce waiting times for endoscopy procedures (BSG). To date most other European countries have not had the same need, as there have been enough medical endoscopists available to cope with the workload. However, with the advent of Colorectal Cancer Screening many health systems in Europe will not be able to implement screening by either sigmoidoscopy or colonoscopy due to a shortage of endoscopists. Opportunities for experienced nurses to undertake endoscopy training have now arisen in other European countries where medical endoscopists

have started to train their local nurses on an informal basis. However, none of these countries has put a system in place to formalise either training or endoscopy practice by nurses similar to the UK (1)

The safety of the patient must be paramount and each patient has the right to be investigated and treated by staff that are appropriately trained and are competent to carry out procedures as clinically indicated (EU Convention on Human Rights and Biomedicine 1997).

Before embarking on training nurses to perform endoscopy the practical and legal risks have to be addressed. The practice of a nurse endoscopist needs to be regulated within the relevant national system for registration of expanded practice and of advanced training. This can only be achieved in co-operation with the national nursing and registration authorities, the national professional societies (medical and nursing), and the relevant ministries of health involved in regulating practice.

To be able to be indemnified for advance practice the nurse endoscopist's job descriptions must define limits of practice and specific responsibilities, including who will obtain consent, prescribe and administer drugs, and patient management before and after procedures (1).

A framework for training nurse endoscopists needs to be established with recognised supervisors, mentors and assessors of practical skills. Trainee nurse endoscopists' education should be at least at a level and depth required to support clinical practical during endoscopic procedures, and overall patient management throughout the episode of care (1). The nurse endoscopist's practice needs to be within the parameters of accountability as defined nationally.

The ENNO-PCN framework stipulates postgraduate specialist training for nurses (2). Based on this, ESGENA makes the following recommendations:

| ENTRANCE QUALIFICATION | PCN RECOMMENDATION | ADDITIONAL ESGENA RECOMMENDATION |
|--|---|--|
| Minimum Qualification | Basic Nurse Training | |
| Minimum Endoscopy Qualification | Appropriate specialist nurse training (National recognised training) | e.g. Endoscopy Specialist Nurse, Stoma Care Nurses, etc. |
| Minimum Clinical Experience | 2 years post specialist nurse training | Clinical endoscopy experience is desirable |
| SPECIALIST TRAINING | | |
| ENNO Framework stipulates | | |
| Length of Course | Minimum of 12 months minimum of 50% of the total duration dedicated to clinical and/or practice training | |
| Institution | In an institute of higher education (University or equivalent) | |
| Education - Theory | 720 hours classroom and study | |
| Education - Clinical Training | | Supervised practice until competency Documented summative assessment of competency prior to independent practice A useful model of structured training can be found in JAG (1) |

References:

1 JAG 2004 (<http://www.thejag.org.uk>)

2 Recommendations for a European Framework for Specialist Nursing Education <http://www.pcnweb.org>

SESSION 8: Management

Perception of Violence on Working Place between nurses in Endoscopy

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Introduction

We use word violence, because it is less ambiguous defined, that aggression, for which more than 100 definitions have been collected. It is evidently and easily recognised and is defined as using physical force and power. The violence types are usually interconnected. Economical violence is hard to distinguish from political, juridical, ideological, physical and sexual harassment (Kanduč, Korošec, Bošnjak, 1998, Klemenc, 2000).

Methods & Materials

The first research about violence was done in 2002 in all endoscopy units in Slovenia using anonymous questionnaire. It was consisted of 8 questions (4 closed and 4 opened). Research which will be presented was made in 2007 between endoscopy nurses working not only in Slovenia but also in some European countries. Nearly the same questionnaire was sent out in November and December 2007. From 46 questionnaires sending out in Slovenia 37 were returned (i.e. 86, 5 % of realisation). From 19 questionnaires sending out of Slovenia to European countries 10 was become returned (i.e. 53% of realisation).

Results

Employees perceive verbal violence very often, rarely physical and sexual. Many of respondents (68% in Slovenia, 30% in European countries) perceive very bad working conditions, unsuitable micro climate (62% in Slovenia and 30 % only in summertime in European countries) and unsuitable places for preparing patients on endoscopy procedures (51% in Slovenia and 40% in European countries).

Discussion

More and more scientists share the opinion that aggressiveness is the learned behaviour i.e. acquired in the same way as the other reactions and activities (Bandura 1977, Pačnik 1989, Klemenc 2000). According to Pačnik (1989) passive aggressiveness is often overseen.

Employees in nursing care in endoscopy units are aware that safety of patients and staff is important element in assuring of quality in nursing care. Recognizing and dealing with different forms of violence contribute to improve safety and working climate.

The results of repeated comparable research in Slovenia and in some European countries show the similarity in perceiving violence regarding to staff and patients. The differences are visible regarding working place where Slovenian and European endoscopy nurses used to work.

Global rating scale (GRS) and its benefits to measure quality and audits of the organisation

Jayne Tillett, Lydney, UK

Introduction

Global Rating Scale (GRS) was introduced by Dr Roland Valori as part of the NHS Endoscopy Improvement Programme, in England in 2005. Scotland introduced GRS in 2006, Wales in 2007 and Ireland in 2008.

What is GRS?

GRS is a web based reporting tool to measure the quality and patient centred care within the Endoscopy setting. There are a number of statements which require a yes or no answer, which are automatically calculated the GRS score. The assessment takes place twice a year usually April and October.

Global Rating Scale (GRS) has twelve patient centred standards which come under two dimensions.

1. Clinical Quality - Appropriateness, Information / Consent, Safety, Quality, Timely Results.
2. Quality of Patient Experience – Equality, Timeliness, Choice, Privacy and Dignity, Aftercare, Feedback.

There are three other domains within GRS-

1. Workforce, this has been designed to help with skill mix review, recruitment and training
2. Training: 3. Productivity

Summary

GRS has helped to raise the profile of the Endoscopy Service, provided evidence for investment in the service, with staff; equipment and training .To provide a patient centred service. With the ability to measure improvement.

References:

www.globalratingscale.com

www.grs.nhs.uk

Intelligent Light – an option to increase the working conditions in endoscopy

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It is a well-established fact that the lightning in connection with the activities in endoscopy rooms and operating rooms is insufficient for several staff groups.

Lightning is often configured to cover the needs of single staff groups (e.g. surgeons), leaving other staff (e.g. nurses) with inappropriate lightning that complicates their work and increases the risk of mistakes.

A lightning that could continuously adapt itself to the needs of each staff, and that in addition could be modified according to the different activities, would solve this problem. Also, as an added bonus, appropriate lightning would further create a suitable atmosphere for both patient and staff.

Based on this issue, the Odense University Hospital (OUH) Department of Surgery has developed a lightning comprising a series of lightning fixtures that may be all changed in both colour and intensity. The fixtures are connected to a user-friendly touch-interface that allows the users to change the lightning in the room according to individual needs. We call it *ergonomic lightning*.

In this presentation the theory and background for using coloured light are described and examples are given in pictures and video.

4.2. ESGENA Poster Rounds on October 19, 2008

ESGENA Poster Round I (Preparation, Sedation & Discharge)

No. 1

Patients' perceptions on the use of name wrist band in outpatient services at NKC Institute of Gastroenterology and Hepatology

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Background: Error in patient identification is a major risk in ambulatory endoscopic services. Name wrist band is commonly used to prevent this error but there is no existing study in relation to patients' perceptions to the value of wrist band use.

Objective: To study patients' perceptions on the value of name wrist band and its benefits on improving patient safety.

Method: Ambulatory endoscopic procedures were performed with 3,168 cases in 2007 at NKC institute. Name wrist band was formerly applied to inpatients, but has recently been introduced to all patients including ambulatory endoscopic services since 2007 in accordance with the hospital safety goal policy. Patients were routinely informed by endoscopy team about wrist band and treatment plan. Adult patients who received endoscopic procedure were asked to fill up the questionnaire about perceptions of the wrist band use before going home. Patients with any language barriers were excluded from study.

Result: A hundred patients were enrolled in this study during 27 May- 13 June 2008. There were no patient's identification errors during the study period. Fifty two percent of respondents were male. The majority of procedures given to patients were panendoscopy, colonoscopy and flexible sigmoidoscopy of 41%,35%and 12% respectively. The result was shown in table I.

| Perceptions on Wrist Band Use | YES | NO |
|--|-----|-----|
| 1. You understand objectives of the name wrist band use | 89 | 11 |
| 2. You find that name wrist band is useful for your treatment | 95 | 5 |
| 3. Your doctor sees the importance of name wrist band | 94 | 6 |
| 4. Your nurse makes use of the name wrist band, e.g., before giving medications or procedures. | 98 | 2 |
| 5. Your identification on the wrist band is correct | 100 | 0 |
| 6. The name wrist band makes you feel irritated, less private, annoyed, painful | 0 | 100 |
| 7. You wish to keep your name wrist band as a souvenir | 54 | 46 |

From the result, knowing the objective of wrist band use was significantly related to patients' participation in identification process by the endoscopy team, such as their names on wrist band, and an awareness of safety in using wrist band by nurses or physicians ($P < 0.05$). All patients appreciated in wearing the name wrist bands. Age and sex were not significantly related to their different perceptions ($P > 0.05$). Further study is needed if information leaflet or other communication tools might increase the patients' perceptions. Name wrist band could be redesigned in response to patients' needs, such as for use as complimentary souvenirs.

Conclusion

Positive perceptions of patients on name wrist band will enhance their participation in using this personal identification and thus improve the endoscopic/patient safety. Name wrist band may be redesigned to serve patient's needs, while information about its application may enhance cooperation among patients.

Acknowledge

The authors would like to thank Dr Wanpen Pichitpornchai RN, PhD. for editing English in this abstract.

No. 2

The use of ethyl chloride spray and professional nursing approach in pain and anxiety control in endoscopy

N.Tüzomay, D.Sabuncular, B.Açıl, B.Şengül, E.Tankurt, Izmir Kent Hospital Turkey

OBJECTIVE: By reducing the fear and anxiety occurring in patients before the procedure in the endoscopy unit by professional nursing approach and lowering their levels of anxiety. On the other hand, the efficiency of ethyl chloride spray on patient as alternative application for reducing the pain during the procedure of opening vascular access has been investigated.

METHOD: 147 patients of whom the endoscopic intervention were performed between the dates of January 1- February 29 were chosen. The research data were collected by the endoscopy nurse before starting the procedure and after the procedure by questionnaire method. Additionally, the information pertaining to intravenous interventions have also been recorded on this questionnaire form. The relief felt by the patient with the explanation of the application to be made has also been specified in the given questionnaire items, our results were compared with the annoyance the patients felt from the medical practice made in another center without applying such a professional approach.

RESULTS: How long did you wait before you were taken into the procedure? I did not wait 120 (81,6%) patients, I waited a little 24(16,3%) patients, I waited for a long time 3(2,1%) patients. Have you been sufficiently informed about the procedure? Yes 134 (91,2%) patients, 8 (5,9%) foreign national patients have been informed in English. Since 5(3,7%) patients were hemorrhagic and mentally confused, their relatives were informed. **In hand interventions,** the dorsal Venus arch ((DVA) 10 (6,8%) interventions, cephalic vein(HCV)9(6,1%) interventions, broad vein (HBV) 6 (4,1%) interventions, basilic vein (HBV) 7 (4,8%) were used.**Arm interventions :** Cephalic vein (ACV) 70 (47,6%) interventions, basilic vein (ABV) 45 (30,6%) interventions have occurred. To 147 patients, ethyl chloride spray was not used before vascular access was opened. After vascular access was opened, the pain perception of all patients was scored according to the numerical evaluation scale (Numerical Rating-Scale-NRS).Between March 1-31, 2008 ethyl chloride spray was used before the vascular access was opened in 110 patients. In this group, in 100 patients cephalic vein, in 10 patients basilic vein has been used. The NRS pain score averages of the patients on whom ethyl chloride was not used were determined as 2,96 + 2,52 and the pain score of the patients to whom ethyl chloride spray was used as 2,4 + 2,54. No significant statistical difference has been found between the pain perceptions of the patients on whom ethyl chloride spray was used and not used. (t = 1,603), SD = 256 p>0,0005).

IN CONCLUSION, it has been seen that the ethyl chloride spray used before venous line placement was not statistically significant in regard to reducing the pain. Giving information to the patients in the endoscopy department about the procedure, helped very much to the tolerance of patient and minimized the level of disturbance caused by the endoscopic intervention. We believe that this kind of high quality nursing service helps to relieve the anxiety of the patients in the endoscopy waiting line.

REFERENCES:

1. D.Sabuncular Kent Hospital Izmir Emergency Medicine Congress (Italy 2007) poster presentation Ethyl Chloride Spray in Pain Control during the vascular Access opening procedure in Emergency Room
2. Birup Meier T.Cummins AS Comparison of tropical anaesthesia methods for venous Cannulation in Adults Eurjpain:1997 : 1(1):37-42

No. 3

The Neighbour Around The Corner - A Model for an Early Detection of Prostate Cancer in the Gastroenterology Unit , Hadassah Ein- Kerem Medical Center

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Background: Cancer of the prostate gland is the second most prevalent lethal form of cancer in men, after lung cancer.¹ Early detection is critical as there are radiology treatments and surgical procedures available for focused cancer which has not metastasized. Approximately half of those diagnosed with prostate cancer will develop metastases which cannot be treated. Early detection and preventing disease progression should be considered life saving activities. According to the guidelines of the American Cancer Society, men over the age of 50 should have their PSA level checked and undergo a rectal examination.² However, during routine check-ups by family physicians, rectal examinations are infrequently performed. During routine rectal examinations in patients undergoing lower digestive system

examinations in the Gastroenterology unit, palpitation of the prostate gland can be performed and serve as an additional tier in the early detection of prostate cancer.

Goals: To evaluate the feasibility of routine rectal examinations for early detection of prostate cancer in the Gastroenterology Unit of the Hadassah University Medical Center and follow-up by family physician. The study evaluated various pathological findings in the prostate gland; a number of new cancer cases which were diagnosed as a result of the survey check-ups in the Unit; and certain patient compliance parameters with regard to gastroenterologists' referrals to family physicians for further urological examination.

Methods: The study population was chosen using convenience sampling of men, over the age of 50, who were electively referred to the Hadassah Medical Center, Ein Kerem for a lower digestive system examination. During the rectal examination, the physician estimated the size, structure and texture of the prostate gland. Demographic details, relevant medical history, rectal examination results and recommendations from the gastroenterologist for follow-up, were collected via a structured questionnaire. Patients with positive pathological results were referred to their family physician for treatment and follow-up. These patients were prospectively surveyed by telephone, regarding examinations performed by family physicians and referrals to urologists, at 6 weeks and 3 months following the procedure.

Results: The study population included 554 males between the ages of 50 – 79 who had not previously been checked for early detection of prostate cancer by their family physician and/or by an urologist, and arrived at our Gastroenterology Unit to be examined for various reasons. In 145 (26.1%) of the patients the gastroenterologist found a pathological mass in the prostate gland. A significant relationship was found between men with prostate findings and age and origin but not education. The group with prostate findings was referred to their family physicians for further examinations. Of the 134 patients who went to their family physician, 58 (43.3%) remained with their family physician for observation and monitoring and 76 (56.7%) were referred to urologists for further examination. Three of the patients (3.9%) who were referred to urologists were diagnosed as suffering from prostate cancer at early stage.

Conclusions and Recommendations: Our study indicates that the suggested model is applicable, efficient, easy to implement and can be introduced with minimal investment of resources. Rectal examinations by a gastroenterologist should be part of the process for early detection of prostate cancer as well as cooperation between family physicians and gastroenterologists and high patient compliance to gastroenterologists' recommendations. Therefore, it is possible and even recommended to implement the model in other gastroenterology units both in Israel and abroad. It is also recommended that a special gastroenterologists' training program for performing complete rectal examinations be implemented.

References

1. Jemal A, Siegel R, Ward E, et al. Cancer statistics, CA Cancer J Clin 2006; 56: 106-130.
2. Smith RA, Cokkinides V, Eyre HJ. American Cancer Society guidelines for the early detection of cancer. CA Cancer J Clin 2005; 55: 31-44.

No. 4

Polyethylene Glycol solution for colon cleansing: 3 or 4 liters?

Valentina Lapina, Daiga Muceniece, Paula Stradina Clinical University Hospital, Riga, Latvia

Polyethylene glycol solution (PEG) is widely used for colon cleansing prior colonoscopy. Unfortunately high recommended amount of PEG solution influence patient acceptance and compliance (1).

The aim of study was evaluate clinical usefulness of diminished PEG solution dosage (3 l instead 4 l as recommended for Fortrans®, Ipsen).

Method. Retrospective analysis of Endoscopy unit Date basis colonoscopy 5782 protocols from 2002-2006 was done. For similarity we selected only PEG solution produced by Ipsen (Fortrans®). Included were total colonoscopy or ileocolonoscopy protocols. Patient's gender, age and prior abdominal surgery included in analysis.

Results. Overall for 1509 investigations were used 3 l and 1883 – 4 l of PEG. Compared colon cleaning grades accordingly Ring's 3 l and 4 l groups statistically was non significant. Summarizing excellent and good colon cleaning we get a paradoxical result – 32.4% in 3 l group and 21.4% in 4 l group. Although this result is statistically significant we need personalized colonoscopy protocols for further analysis. Analyzing patient age influence on colon cleansing we found similar picture – 40 years old and youngest 3 l PEG was better and, surprisingly, poor colon cleaning percentage were very low (9.2%) compared with 14.4%; $P < 0,05$) from 4 l group. Comparing with the youngest patients group, for patients over 60 significant benefit of 4 l cleaning is established: 1) excellent preparation 7:1 ($P < 0,05$); 2) poor preparation 14.3% against 18.8%. Statistically significant difference for female gender between 3 and 4 l groups were not found. Man colon cleaning with Fortran's 3 l and 4 l were very similar, but in 4 l group significantly more excellent cleaned colon cases ($p < 0,05$). For patients without or with one or two abdominal surgeries there

were no differences. Therefore our data didn't differ from similar but prospective controlled study of 110 patients.

Summary. Overall colon cleansing before colonoscopy between patients preparing with 3 or 4 l of Fortran's didn't differ. For oldest patients prepared with 3 l constantly cases with poor colon cleaning arise. For excellent colon cleaning 4 l is preferable in all cases except younger than 40 years males.

Take home message.

1. Colon cleansing with 3 litre of polyethylene glycol solution is good for younger patients, especially younger than 40 years.
2. For patients older than 60 years we recommend use only regimen with 4 litres of polyethylene glycol solution.

References:

- Lichtenstein G.R., Cohen L.B., Uribarri J. Bowel Preparation for Colonoscopy - The Importance of Adequate Hydration. *Alim. Pharmacol, Ther.* 2007; 26(5): 633-641.
- Felt-Bersma R.J.F., Szojda M.M., Mulder Ch.J.J. No difference between 3 or 4 liters polyethylene glycol lavage solutions prior to colonoscopy: a prospective randomized controlled trial. *Falk Symposium No.164. Poster Abstracts.* Budapest, Hungary, 2008, p.31.

No. 5

Changing practice of sedation during endoscopic ultrasound: Propofol versus Midazolam

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INTRODUCTION Endoscopic ultrasound (EUS) is routinely performed in several reference centers throughout the world. The type of sedation procedures is however variable and the use of propofol sedation is increased in view of an improved efficiency of the procedures. Large prospective studies demonstrated that propofol provides significant advantages sedation during endoscopic procedures; propofol was more effective and safer than the combination of midazolam and meperidine for achieving and maintaining an adequate level of sedation during endoscopic procedures, with better titration of the level of sedation and shorter recovery times.

AIM The two types of procedures were compared in order to measure recovery time, EUS procedural time, safety of administration by registered nurses, cost-benefit ratio, as well as endoscopist and patient satisfaction. Complications were assessed prospectively using a detailed protocol developed at the beginning of the study.

PATIENTS AND METHODS The study was performed in the Research Center of Gastroenterology and Hepatology, with inclusion of 40 consecutive patients selected for EUS. Both propofol and midazolam were administered by registered nurses under the supervision of the endoscopist and / or anesthesiologist. The patients were divided in two groups (22 patients with propofol and 18 patients with midazolam).

RESULTS A total number of 40 patients were included, while the type of sedation was selected as a function of patient and doctor preference, after an informed consent was carefully discussed with the patient. The required exam was necessary in each case without any adverse reactions. The use of propofol was associated with a shorter recovery time (9.5 vs 17.3 minutes) and lower costs as compared with the midazolam group. Moreover, the EUS procedural time was reduced in the propofol group independent of the type of EUS (diagnostic or therapeutic). The overall patient satisfaction measured on a 10 point VAS (visual analog scale) was significantly higher both for the patients as well as for the endoscopists performing the EUS procedure.

CONCLUSION The use of propofol sedation seems to represent a better option as compared with conventional midazolam sedation, although further studies are recommended in the future.

No. 6

Propofol: patients best friend during endoscopy

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Introduction

The introduction of propofol (P) for the sedation of patients undergoing colonoscopy gave hope to reduce the disadvantageous side effects of midazolam (M), which was used as standard sedation medication until 2005 in our institute. We prospectively evaluated two independent groups of 60 patients, one treated with M and the other treated with P, to detect possible advantages and disadvantages for the patient and for the endoscopic procedure.

Aim

To detect differences between the two different medications on patients comfort, endoscopic procedure and complications.

Method

Patients underwent the same bowel preparation in both groups. During examination specialised anaesthesia (SAE) and nurse employees were necessary in P group, whereas patients sedated with M received supportive care by an endoscopy nurse only. Endoscopies were performed by doctors in training supervised by senior specialist or by senior specialists directly.

Patients in the M-treated group were monitored using a combined pulse and oxygen saturation machine (Dynamap) which was checked continuously by the endoscopy nurse. Patients in the P-treated group were monitored by the SAE. Depth of sedation was measured by assessing consciousness and appropriate reactions to questions or stimuli, generating 5 levels of consciousness.

Results

Of all the various parameters we evaluated, the most important for daily practice were cecal intubation time, depth of sedation, patient discomfort and recovery time.

Cecal intubation was achieved within 15 min in 70% of P treated patients and in 53% of M treated patients.

In P treated patients, sedation was graded as deep sedation in 83%, with reactions only to direct contact. In M treated patients, sedation was graded as light sedation in 74%, with conversation being easily performed.

Discomfort during the procedure, such as pain, vomiting or discomfort was reported by 7% of P treated patients and by 74% of M treated patients.

Recovery time before dismissing the patient was shorter than 60 min in 78% in P treated patients. The majority of M treated patients (76%) stayed longer than 60 min on the recovery unit.

Conclusion

Our data suggest that colonoscopy using propofol sedation has advantages for both the patient and the endoscopist concerning patient discomfort and, possibly, time of the procedure.

No. 7

Clinical efficacy of Dexmedetomidine alone is less than Propofol for conscious sedation during ERCP

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Background: Propofol is an accepted method of sedation for an ERCP and generally achieves deep sedation rather than conscious sedation, and dexmedetomidine has sedative properties of equivalent efficacy.

Objective: To examine the hypothesis that dexmedetomidine is as effective as propofol combined with fentanyl for providing conscious sedation during an ERCP.

Design and Setting: Randomized, blind, double-dummy clinical trial.

Patients: Twenty-six adults, American Society of Anesthesiologists status I to III, underwent an ERCP.

Interventions: Patients were randomized to receive either propofol (n 14) (target plasma concentration range 2-4 mg/mL) combined with fentanyl 1 mg/kg, or dexmedetomidine (n 12) 1 mg/kg for 10 minutes, followed by 0.2 to 0.5 mg/kg/min. Additional sedatives were used if adequate sedation was not achieved at the maximum dose allowed.

Main Outcomes Measurements: The sedation level was assessed by the Richmond alertness-sedation scale and the demand for additional sedatives. Furthermore, heart rate, blood pressure, oxygen saturation, and respiratory rate were continuously assessed.

Results: The relative risk (RR) was 2.71 (95% CI, 1.31-5.61) and the number of patients that needed to be treated (NNT) was 1.85 (95% CI, 1.19-4.21) to observe one additional patient with drowsiness 15 minutes after sedation in the dexmedetomidine group. Also, the RR was 9.42 (95% CI, 1.41-62.80), and the NNT was 1.42 (95% CI, 1.0-2.29) to require additional analgesic. However, there was also a greater reduction in blood pressure, a lower heart rate, and greater sedation after the procedure.

Conclusions: Dexmedetomidine alone was not as effective as propofol combined with fentanyl for providing conscious sedation during an ERCP. Furthermore, dexmedetomidine was associated with greater hemodynamic instability and a prolonged recovery.

References

1. Kremer MJ. Pharmacology. In: Odom-Forren J, Watson D, editors. Practical guide to moderate sedation/analgesia. St Louis (Mo): Elsevier Mosby; 2005. p. 53-80.
2. Chen WX, Lin HJ, Zhang WF, et al. Sedation and safety of propofol for therapeutic endoscopic retrograde cholangiopancreatography. *Hepatobiliary Pancreat Dis Int* 2005;4: 437-40.
3. Fanti L, Agostini M, Casati A, et al. Target-controlled propofol infusion during monitored anesthesia in patients undergoing ERCP. *Gastrointest Endosc* 2004;60:361-6.

Learning Outcomes:

1. Dexmedetomidine did not produce an effective sedation when compared with propofol combined with fentanyl in ERCP exams.
2. Hemodynamic effects of dexmedetomidine may be useful in patients with high risk of respiratory depression.

Gastrointest Endosc 2008;67:651-9.

No. 8

Nursing care and instructions to outpatients discharge after endoscopy exams under sedation

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Introduction: It is a standard practice to perform diagnostic and therapeutic endoscopic with the patient under moderate or deep sedation. The sedation can reduce the fear and the anxiety. Midazolam and/or meperidine are the choice drugs to induce sedation and minimize the anxiety and pain for endoscopy and/or colonoscopy procedures. Due its properties it may produce temporary dizziness and amnesia.

Objective: Nurse must be certain about the patients' conditions for discharge ensuring its security and well being. Some verbal instructions may be not be enough, making it necessary to reinforce the orientations by written form.

Methods: In Hospital de Clínicas de Porto Alegre (HCPA) the discharge informations are done by the nurse orally and by written form for the patient or for his companion, as necessary. The following instructions, among others, are: orientations about the diet, the need to have some rest a little more at

home, do not drive or make any activity that requires attention. In addition, informations about the results and the new appointment with the physician are given. Also, orientations in case of emergencies are very important, such as bleeding, swallowing pain, chest pain, or blood vomiting. In such cases, is recommended to look for the emergency room of the HCPA. Also a phone number is given for doubts.

Results: Patients and companions expressed better comprehension when received the written form orientations after verbal ones.

Conclusions: This procedure guarantees the patients' comprehension and helps to diminish its doubts and security beyond to give more security to the staff members.

Learning Outcome:

Informations after sedation should be reinforced by given in written form for patient or companion.

References:

1. Müller S, Lagemann RC. Cuidados de Enfermagem com paciente submetido à Endoscopia Digestiva Alta. In: Muller S, Lagemann RC. Enfermagem em Endoscopia Digestiva. Ed MEDSI. 2002. Pg 91-102.
2. Kielty LA. An investigation into the information received by patients undergoing a gastroscopy in a large teaching hospital in Ireland. *Gastroenterol Nurs*. 2008 May-Jun;31(3):212-22.
3. Spodik M, Goldman J, Merli K, Walker C, Alpini B, Kastenber D. Providing an endoscopy report to patients after a procedure: a low-cost intervention with high returns. *Gastrointest Endosc*. 2008 Jan;67(1): 103-11.

No. 9

Recommendations after an upper gastrointestinal endoscopy

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Introduction

Upper Gastrointestinal Endoscopy (UGE) is a diagnostic and therapeutical technique which consists of viewing the inside of the oesophagus, stomach and duodenum with a videoendoscope. The pharynx is sprayed with Lidocaine and the patient is placed in the left lateral decubitus position.

The technique is usually uncomfortable, because the endoscope contacting with the pharynx and anaesthesia, both of which produce nausea, sialorrea and difficulty in swallowing. When the technique is finished, the patient may feel uncomfortable for several reasons. The patient may detect and minimize them. In our unit we have made some written recommendations about the post-operation nursing after the UGE, we explain it orally and then we give them to every patient. This is carried on by the nurse.

The aim of this study is to determine the efficacy of this recommendations and the satisfaction level with the standard of nursing. The results will help us to maximize the quality of the nursing standard.

Methods

Cross-sectional study was carried out during 2004 in Digestive Endoscopy Unit in Hospital de Fuenlabrada. 202 outpatients attending for gastroscopy, over 16 years of age, mentally alert and able to communicate freely, were asked to participate in a phone questionnaire, type Likert, the day after the gastroscopy.

Results

The average age was 44.6±15 and the majority of patients were women, 56.4% (114). Employment Status: 59% active (120); 24% (48) housewives, 9% (18) retired. Educational level: 49% (99) primary education, 33% (67) secondary education, 7% (14) professional degree, 10.4% (21) no studies.

Concerning the information after the procedure, 83.2% are very satisfied, 14.4% satisfied, 1% medium and unsatisfied 2.5%.

99.5% understood the recommendations and 99% followed them.

60.9% declared having problems post-UGE, such as throat irritation, 17.8% stomach-ache. None went back to the Emergency Unit with these problems.

Discussion

Most of the patients had understood and followed up the recommendations, so they are useful. Taking into account that more than half the patients has no studies or only primary studies, they understood clearly the recommendations, and so the information was effective.

The problems after the procedure were described in the recommendations paper, so the patients could anticipate it and they did not go to the Emergency Unit.

Bibliography

- Campo R, Brullet E, Montserrat A, Calvet X, Moix J, et al. Identification of factors that influence tolerance of Upper Gastrointestinal Endoscopy. *European Journal of Gastroenterology & Hepatology*. 1999. Vol 11, 2
- Trevisani L, Sartori S, Putinati S, Gaudemi P, Chiamenti CM et al. Valutazione del livelli di ansia in pazienti sottoposti ad endoscopia diagnostica. *Recenti Progressi in Medicina*. Vol 93, n° 4 Aprile 2002. 240-243.
- Walmsley RS, Montgomery SM. Factors affecting patient tolerance of Upper Gastrointestinal Endoscopy. *J Clin Gastroenterol*. Vol. 26 (4) June 1998 253-255.

ESGENA Poster Round II – Treatment and Patient Care

No. 10

Minimal invasive endoscopic treatment for oesophageal stenosis

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Introduction: There are several diseases which cause nutritional disability by oesophageal stenosis (gr. IV. reflux disease, achalasia, oesophageal cancer, compression and dislocation of the oesophagus caused by lung tumour and its mediastinal lymph node metastasis, stricture of the anastomosis after oesophageal extirpation, stricture of the oesophagus caused by irradiation).

Aim and method: There are different methods for the palliative treatment of oesophageal stenosis: dilatation, laser therapy, conventional prosthesis implantation and self expandable stent implantation. Nutrition of those patients with inoperable oesophageal cancer can be solved by insertion of conventional Rüsç prosthesis. In the case of compression or dislocation of the oesophagus the most common method in palliation is the implantation of self expandable stent, which is more comfortable for the patients.

After dilatation of the stenotic part of the oesophagus by a Savary-Gilliard probe under fluoroscopy, endoscopic examination could be performed for those patients, for whom the insertion of the endoscope was impossible. These minimal invasive methods for palliation of nutritional disability are less stressful for the patients than surgery, but in many cases could be risky as well.

Results: Patients with oesophageal stenosis are usually in malnourished and cachectic condition, they often have cardiac or respiratory diseases, and in a lot of cases have oesophago-respiratoric fistula. Due to the manipulation in the mouth, and the high risk of aspiration, during these interventions respiratory-failure can arise. In these cases suction of the airway, oxygen therapy, and even resuscitation could be needed under the examination.

Conclusions: Endoscopic assistants in our endoscopic outpatient department are supposed to do assist in these examinations, which require more preparation in the everyday practice.

References.

Verschuur EM, Kuipers EJ, Siersema PD. Esophageal stents for malignant strictures close to the upper esophageal sphincter, *Gastrointest Endosc.* 2007 Dec;66(6):1082-90.

Lee SH. The role of oesophageal stenting in the non-surgical management of oesophageal strictures *Br J Radiol.* 2001 Oct;74(886):891-900.

No. 11

Starting a new endoscopic technique: Endoscopic Retrograde Cholangio-Pancreaticography (ERCP)

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Introduction:

Endoscopic retrograde cholangiopancreatography (ERCP) is a technique that combines the use of endoscopy and fluoroscopy to diagnose and treat certain problems of the biliary or pancreatic ductal systems. It is an x-ray examination of the bile ducts which is aided by a video endoscope. The nursing role during the technique is very important, as well as the knowledge of the specific materials, coordination with endoscopist and the continuous monitoring of the patient. In "Hospital de Fuenlabrada" (which opened recently), deep sedation by an anaesthesiologist is part of the protocol.

The aim of this study is to describe the starting of this new activity and to evaluate the first results.

Methods:

A cross-sectional study was carried out from March 2006 to August 2007.

75 patients attending for ERCP were included. The data was collected specifically designed for this study and was analyzed by SPSS 10.0. Sociodemographic data, therapeutics and complications were analyzed.

Results:

The study was carried out on 75 patients, 57.1% (n=36) females. The average age is 58.4% years old (standard deviation: 20.24). Success in ERCP (cannulation of the proper duct) was 70.7% (n=53), biliar duct 72% and pancreatic duct 77.7%. Therapeutic most developed was: esphinterectomy 49.3%, Fogarty balloon 50.7%, Dormia basket 10.7%, biliar prothesis 16%, biliar duct dilatation 1.3%, lytotripsy 1.3%, pancreatic sphynterectomy 6.7%, pancreatic prothesis 6.7%. 86.7% had no complications after the

procedure; of the 13.3% who had complications they are broken down as follows: 4% had pancreatitis, haemorrhagia 2.7%, cholangitis 6.7%, pulmonary tromboembolism 1.3% (these percentages refer to the 75 patients). Every patient had sedoanalgesy by an anaesthesiologist, and also the Pulse rate, O₂ pulsioximetry, non-invasive blood pressure, oxygen by nasal cannula. Propofol, remifentanyl and midazolam were administered intravenously. Every patient spent at least 1 hour in "Day Hospital" till they were recovered from the medication.

Discussion:

ERCP is a complex technique which requires coordination between Gastroenterologist, Anaesthesiologist, Rx technical and nurses. A work group is needed for ERCP effectiveness, specially cannulation and sphincterectomy. Sedation controlled by anaesthesiologist has given the best conditions during the technique. This is shown as time saving, better tolerance for the patient, high monitoring and better personnel satisfaction. As we develop every ERCP under sedation, a new study about patient's satisfaction with the technique is recommended.

Bibliography

- Jones MP, Ebert CC, Sivan T, Spanier J, Bonsal A et al. Patient Anxiety and elective Gastrointestinal Endoscopy. J Clin Gastroenterol. 38(1), Jan 2004.
- Margaix Margaix, L Gómez García, F Rubio Valverde, A Ramos San Valero, A y Borrás, P. Cuidados de enfermería en la C.P.R.E. Enferm Integral. 2000. 53:XXIII-XXVI. Protocolo y pautas de actuación.

No. 12

Influence of Simeticone and Metoclopramide administration for Capsule Endoscopy preparation: preliminary results

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Presence of intraluminal bubbles and impossibility to visualize entire small bowel are limitations in capsule endoscopy. It has been described that prokinetic and/or antiflatulent agents administration, would help to obtain better results.

Objectives: 1. To analyze the effect of metoclopramide administration on gastric and intestinal transit time. 2. To evaluate the quality of images after simeticone ingestion.

Patients and methods: We included 45 patients from March until October 2007. Patients were randomized, prospectively in 4 groups for the administration of metoclopramide (10 mg), simeticone (80 mg) or both previously to capsule ingestion: Group I (control, 14 patients), Group II (metoclopramide and simeticone, 8 patients), Group III (metoclopramide, 11 patients) and Group IV (simeticone, 12 patients). Presence of intestinal gas was classified in 4 grades (0-3), according to a scale recently described. We analyzed separately proximal and distal small bowel segments.

Results: 45 patients (21 men and 24 women, Mean age: 56.4 +/- 18 years). Gastric transit time was 47.5 +/- 63.4 minutes in control group vs 20.9 +/-12.05 minutes in patients taking metoclopramide (p=0.1). There were no significant differences in intestinal transit time. In proximal small bowel 87% of patients in group II had none or minima bubbles compared to 70% of patients in control group. Distally, 57% of patients in control group had a lot of gas avoiding to visualize mucous compared to 0% of patients in group II (p=0.07). No side effects were observed.

Conclusions: Our preliminary results in a small group of patients, suggests that prokinetic agents and simeticone ingestion before capsule administration can improve visualization and decrease the number of incomplete explorations.

No. 13

Influence factors for nurse preformed endoscopy

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A qualitative study was undertaken to examine influential factors to the development of the gastrointestinal nurse endoscopist (NE) role in the United Kingdom (UK). Demand for NEs increased in the UK due to the introduction of national colorectal cancer screening¹ and a greater burden of gastrointestinal disease². It was necessary to examine the experience of NEs to make recommendations to improve performance of the role and quality of patient care.

The study involved: (i) Reviewing existing literature examining NE roles (ii) Conducting face-to-face, one hour, semi-structured interviews with eight NEs. (iii) Inductive analysis of transcripts to identify themes and

categories.

The literature review showed that nurse endoscopy could be carried out at the level of advanced or specialist practice if the competencies of advanced practice could be met. However, studies examining the role of NEs were limited. Therefore both literature on NE roles and advanced and specialist roles was examined to find facilitating and impeding factors to roles. It was concluded that, though there were a number of facilitating factors, including medical and nursing colleague support, patient interaction and networking; lack of role expectations, a lack of focus and excessive demand led to potential role overload and strain for nurses in advanced and specialist roles.

Data gained during the interviews was analysed qualitatively. The following categories emerged: 1. Role structure, 2. Collaboration, 3. Experience, and 4. Education and Training.

The main findings were: that patient services could be better provided from practitioners whose roles were structured around patient needs and not primarily focused on performing endoscopy; that degree level education and training were facilitating when accessed; and that NEs may be providing an inferior patient service due to being allotted lower quality equipment, less experienced nursing support and being given lower priority than medical endoscopists.

Recommendations included that nurses undertake endoscopy as part of gastroenterology advanced nurse practitioner role for which they are educated to degree level, with a preference for Master's level. Additionally, patients seeing NEs should receive equal treatment, in terms of equipment, staff and priority, to those seeing medical endoscopists.

References:

1. United Kingdom Parliament (2003). Hansard 3rd June 2003. www.publications.parliament.uk/pa/cm200203/cmhansrd/vo030603/text/30603w93.htm
2. University of Swansea (2006). Gastroenterology Services in the UK. The burden of disease, and the organisation and delivery of services for gastrointestinal and liver disorders: a review of the evidence. www.medicine.swan.ac.uk

No. 14

Guideline for patients with chronic hepatitis C

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Introduction: Patients with chronic hepatitis C who are candidates to antiviral therapy should receive adequate information about the disease and treatment in order to improve adherence

Aims: 1. To provide information regarding their illness and therapy to patients with chronic hepatitis C. 2. To recommend measures to mitigate possible adverse effects. 3) To Promote and improve their selfcare and the quality of life during therapy.

Methodology: Specific discussion groups will : 1) Unify criteria. 2) Define a target group of patients that may benefit of this guideline and 3) Develop and validate the guideline with the specialized Nursing Group in Hepatitis C.

Results: The guideline contains different sections: 1) Introduction, 2) Current situation, 3) Transmission mechanisms, 4) Prophylactic measures, 5) Treatment, 6) Side effects and 7) General Recommendations on basic hygiene and diet.

Conclusions: The guideline will represent a useful tool to reinforce the information given to the patient by the health care workers and will promote patient adherence to treatment. The efficacy of the guideline will be evaluated in the future taking into account the results obtained with its implementation in the clinical practice.

References:

1. Solà R, Galeras JA, Montoliu S, et al. Poor response to hepatitis C virus (HCV) therapy in HIV – and HCV- coinfected patients is not due to lower adherence to treatment. *AIDS es Huum Retrov.* 2006; 22 (5):393-400.
2. Sabaté P. Who adherence meeting report. Adherence to longterm therapies: policy for action. Organización mundial de la Salud, 2001.
3. Shehab TM, Sonnad SS, Lok AS. Management of hepatitis C patients by primary care physicians in the USA: results of a national survey. *J viral Hep.* 2001;8(5):377-383.

No. 15

Nurse led rehabilitation clinic for patients with chronic hepatic insufficiency

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Introduction: Nurse-led rehabilitation clinics have improved the outcome of patients in several areas of medicine such as heart failure, chronic lung failure and malignant disease (1,2). We wanted to intensify the follow up and to measure different quality assurance parameters in patients with chronic hepatic insufficiency, which were therefore enrolled in a nurse-led rehabilitation clinic after having been treated in a stationary unit for an attack of acute hepatic encephalopathy.

Aims & methods: The patients were booked for a visit of 15 – 30 minutes by a specialist nurse from our stationary department with 1-4 weeks intervals. Standard blood samples including serum alcohol were measured each time together with clinical parameters such as cerebral function, muscular function, coordination, body temperature, pulse, blood pressure and abdominal circumference. Special attention was drawn on the possibility of recurrent infection in these patients due to their defective immune system. Also the state of nutrition was monitored and extra protein drinks added if necessary. Life style changes, alcohol abstinence and daily life activities were discussed at each visit. The patients could be referred by the nurse to the stationary unit at all times.

Results: Until now 9 patients have been enrolled, age 47 – 63, mean 61, F/M ratio 3/6. All had chronic hepatic insufficiency on basis of alcoholic cirrhosis. The follow up period was of 7 months, mean 4 months. The patients were very satisfied with the clinic and the close physical relationship with the stationary unit and more satisfied compared to control in the normal out-patient clinic. During the period of observation, none of the patients died: Four patients were acutely referred several times to the stationary unit due to infection (3), ascites (2), anaemia or bleeding episodes (2). One of the patients was referred 8 times. New episodes of acute encephalopathy were recorded in 2 patients. Four of the 9 patients were referred for evaluation of liver transplantation at the University clinic in Copenhagen but no one has been transplanted yet.

Conclusion: Nurse-led rehabilitation clinics have not yet been reported in patients with chronic hepatic insufficiency and the present data seem to be the first from such a clinic. The data show that this type of clinic in close relation to a stationary unit is attractive for patients with chronic hepatic insufficiency and it seems as if the patients will benefit from such a tight control with doctors and nurses with special knowledge of liver diseases.

Ref.

Stromberg A et al. Nurse-led heart failure clinics improve survival and self care behaviours in patients with heart failure. Results from a prospective randomized trial. *Eur Heart J* 2003; 24: 1014-23.

Wong FK, Chung LC. Establishing a definition for a nurse-led-clinic: Structure, process and outcome. *J Adv Nurs* 2006; 53: 358-69.

No. 16

Net information and web information

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Introduction: Neuroendocrine Tumors (NET) are rare tumors with an incidence rate for NET in the small intestine of 2.0-2.4 per 100.000 population per year. The true incidence seems higher as autopsy studies have reported incidence rates up to 8.4 per 100.000 inhabitants (1,2). Treatment is therefore centralized at 2 University Hospitals in Denmark. Approximately 140 patients from the western part of Denmark are treated at Aarhus University Hospital. Many patients have often been seen by several doctors with different specializations at local hospitals before a final diagnosis is established and treatment is initiated. Although the patients receive a large amount of information it is our impression that the patients often find it hard to obtain clear and specific information about the disease, and that patients feel isolated. Only a few leaflets about NET treatment are available in Danish, and only sparse Web-information about the disease can be found in Danish. No National Patient Association (NPA) existed at the time of the investigation.

Aims: The primary aim of this investigation was to identify NET patients' need for information after establishment of the diagnosis. Furthermore, the needs for further Web-based information as well as the demands for a National Patients Association (NPA) were investigated.

Materials and Methods: 39 NET-patients treated at Aarhus University Hospital completed questionnaires regarding: Socio-demographic data, diagnosis, NET related information, medication, Web-based information and the need for a NPA.

Results: Approximately 56% of the patients were men, mean age was 65 years, and > 90% were living together with a partner. 25% were still in a working position. 64% were diagnosed at a University Hospital. Less than half were given written information regarding NET. Approximately 85% received treatment for NET. 15% were not treated, mainly due to side effects or curative operations. Only a few patients expressed an interest in self-injection with Somatostatin analogues. Most patients appreciated the monthly contact with the hospital. A total of 68% had Web access and were active users of the Internet; 95% of patients \leq 65 years had Web access. All Web users responded positively towards a Danish homepage for NET patients. A total of 72% would welcome an NPA and many wished to take active part in an NPA.

Conclusion: We identified a need for additional written and Web-based information in Danish regarding NET. Despite a relative high mean age, a large number of patients have Web access and are current users of the Internet. There was no major interest in self-injection with Somatostatin analogues. It seems that there was a need for an NPA and that patients were willing to commit themselves to this.

References:

- 1 Berge T., Linell F. Carcinoid tumors. Frequency in a defined population during a 12-year period. Acta Pathol Microbio Scan [A] 1976; 84: 322-30.
- 2 Modlin I.M. Lye K.D. Kidd M.: A five decade analysis of 13,715 carcinoid tumors. Cancer 2003; 97: 934-959.

No. 17

Functional status, health-related quality of life and symptom severity in patients with chronic intestinal pseudo-obstruction and enteric dysmotility

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Chronic intestinal pseudo-obstruction (CIP) and enteric dysmotility (ED) are rare, gastro-intestinal motility disorders that cause a lot of suffering. Both CIP and ED are characterized by severe gastrointestinal symptoms and measurable abnormalities of gut motor function. [1] The main difference between CIP and ED is that dilated bowel is present in CIP but not in ED. These diseases are life-long and there is no curative treatment. Most of the patients need treatment with analgesics and nutritional support and needs for medical and nursing care are extensive. [2] The prognosis is variable but in general it is poor. Little is known about perceived functional status and health related quality of life (HRQL) in patients with CIP and ED and data on patients' own perceptions of HRQL would be valuable as an 'outcome' variable for these patient groups in order to identify specific needs and to facilitate co-ordination of their care.

Objective: To investigate if patients with CIP differ from those with ED regarding self-reported measures of functional status, HRQL, and symptoms and to investigate whether symptom severity is correlated to perceptions of functional health and HRQL.

Methods: We used 3 validated questionnaires: the Sickness Impact Profile (SIP), the Swedish Health-related Quality of Life Questionnaire (SWED-QUAL) and the Gastrointestinal Symptom Rating Scale (GSRS).

Patients: We studied 28 patients (20 females) with CIP (median age 48, range 28-80 years), and 26 patients (22 females) with ED (median age 50, range 20-75 years).

Results: We found no significant difference in the overall, or the subscales of, GSRS between the two groups. Patients with CIP scored significantly worse on the SIP aggregated physical dimension (body care and movement, mobility) than did patients with ED ($p < 0.01$). Patients suffering from CIP reported a poorer general health (SWED-QUAL) compared to patients with ED (28.0 vs. 44.8, $p < 0.01$). Patients with CIP exhibited strong correlations between severity of abdominal pain and 9/12 subscales of SWED-QUAL and the SIP subscale "emotional behaviour and work". Likewise, the severity of indigestion correlated strongly with 8/12 subscales of SWED-QUAL and the SIP aggregated physical dimension and the subscale "eating and work" among patients with CIP. In patients with ED, strong correlations were only found for abdominal pain and constipation with 4/12 subscales of SWED-QUAL (satisfaction with physical health, positive affect, limitation due emotional health problems, general health) and the SIP subscales "body care and movement", "home management", and eating.

Conclusions: Patients suffering from CIP reported poorer functional health and general health, as compared to patients with ED. In particular, abdominal pain and indigestion were found to influence the perceived HRQL in patients with CIP but less so in patients with ED.

References:

1. Wingate D, Hongo M, Kellow J, et al. Disorders of gastrointestinal motility: towards a new classification. J Gastroenterol Hepatol 2002;17 Suppl:S1-14.

No. 18

Nursing quality and postoperative monitoring of patients undergoing surgery for perforated peptic ulcer in Denmark – results and perspectives

Ann-Sophie Nielsen, Ellen-Margrethe Jacobsen, Hanne Christiansen, Ulla Bachmann, Anne Nakano. RN in the Danish National Indicator Group re perforated peptic ulcer.

Objectives: To present and discuss national results from the 1. registration period of basic postoperative monitoring for patients undergoing surgery for perforated peptic ulcer. Basic postoperative monitoring are defined as registration and documentation of the following three indicators: 1) Daily weight (standard 90 %) , 2) Fluid balance (standard 90 %) and 3) Blood pressure, pulse, temperature, oxygen level in blood (SAT) and level of consciousness twice a day (standard was decided after the first audit 2007). All parameters are to be registered for the first three postoperative days. It is necessary that all 1-3 or 1-30 measurements are registered to fulfil the standard.

Methods: The Danish National Indicator Project (DNIP) has developed evidence based Indicators to follow the quality of treatment and care for patients suffering from perforated peptic ulcer.

Data for all indicators are registered in a national database. Participation is mandatory for all hospitals treating the above patients.

Results: From the 1st September 2006 to the 31st August 2007 386 patients are registered in the DNIP database corresponding to a completeness of registered patients at 98 %. Completeness of data for the three specific indicators was 94, 95 and 95 % respectively.

Table 1: Results: Basic postoperative monitoring (The first three postoperative days)

| | 1) Daily weight | 2) Daily fluid balance | 3) Blood pressure, pulse, temperature, SAT and level of consciousness, 2 times a day |
|-----------------------|-----------------|------------------------|--|
| Achieved standard (%) | 25 % | 76 % | 67 % |

Discussion: The completeness of registered patients and the completeness of data for the specific indicators demonstrates a large professional awareness. The desirable standards are far from fulfilled at the national level. A reason for lacking of fulfilment could be just one missing measurement. Patients are transferred postoperatively between intensive care units and intermediate wards with different procedures, levels of observation and documentation. This makes it difficult to find the relevant data afterwards, taken that all these data are registered. Daily weight measurement had, not surprisingly, the lowest fulfilment of the standard. Mortality for patients undergoing operation dropped from 31 % to 24 % in this period of registration. Whether it is due to the intensive focus on basal postoperative monitoring, or random variation, future results will show. Results for DNIP are published once a year on sundhed.dk in order to support further quality development. Developing quality in nursing requires that nurses find this sort of data important. Practice will develop if knowledge about the importance of basal postoperative monitoring is spread within the field. Standards and national guidelines is a way to reach the desirable target. The goal is to identify more specific indicators for the benefit of these seriously ill patients.

Referencer: www.NIP.dk, www.sundhed.dk

4.3. ESGENA Plenary Session on October 20, 2008

Plenary Session: New Techniques & Developments in Endoscopy

OLYMPUS MEDICAL SYSTEMS EUROPA: Optimisation of endoscope workflow in between patient examinations

Reinhard Blum, Hamburg, Germany

Endoscopy is becoming a more and more efficacy oriented medical service. The number of examinations increases while being locally concentrated.

In this respect the workflow of endoscopic examinations and the turnaround times of reusable equipment have to be optimised. Furthermore, hygiene awareness and requirements for safe reprocessing are gaining in importance.

Olympus provides system solutions for an optimised and safe workflow of endoscopes and accessories in-between patient examinations, with special attention to reprocessing and storage.

BOSTON SCIENTIFIC : Biliary Stricture Therapy - the Platinum Standard

Thomas Carter, UK

Endoscopic biliary stenting has evolved substantially in the past 20 years, particularly in malignant, unresectable conditions. Advances include:

Plastic vs Metal Stents:

Two studies^{1,2} have shown a significant survival time advantage for patients receiving a metal stent, metal stents giving on average 2.5 months longer survival than plastic stenting. In addition there are many publications showing that plastic stents occlude more rapidly than metal stents³ and therefore for most patients⁴ metal stents are a cheaper method of treatment.

Uncovered vs Covered Metal Stenting:

Two controlled randomised trials have shown an advantage for covered versus uncovered metal stenting^{5,6} in terms of occlusion rates. However, some stent coverings seem to be permeable by tumour (polyurethane type)⁷.

Different Metal Stent Designs:

Stents with large spaces between the wires⁸ and those with a low expansion force⁹ have been shown to have an inferior performance, possibly due to smaller spaces between wires giving less chance of ingrowth and high expansion force resisting compression by the tumour.

Introducing the Platinum Standard

Wallstent™ is the most studied stent¹⁰ with over 17 years of clinical performance data. Wallstent has a small mesh design to resist tumour ingrowth, Permalume™ covering option and reconstrainable delivery system. The new WallFlex™ RX biliary stent is a Platinol™ wire stent with small spaces between wires. Platinol wire is a unique innovation to Boston Scientific, giving fluoroscopic visibility along its full length, plus high flexibility and radial force. WallFlex is available in fully, partially and non- Permalume™ covered options.

Nurse-Friendly Delivery System:

The delivery system has a marker to allow the nurse to know when the stent can be reconstrained, and provides tactile feel for the nurse to monitor deployment progress. The RX delivery system also allows the guidewire to be locked, which is designed to reduce the risk of losing access and which leaves the nurse free to concentrate on deployment of the stent.

Early results with the WallFlex biliary have shown it is safe and effective for palliation of unresectable malignant biliary strictures, with data from several studies published at DDW earlier this year.

COOK MEDICAL : Ergonomics in Endoscopy

Simon Brouwers, Senior Product Manager Cook Endoscopy, Cook Ireland

What is Ergonomics?

¹ Schmassmann et al. Am J Gastroenterol 1996

² Waschke et al UEGW 2006

³ Moss AC et al, Cochrane Library 2006

⁴ Soderlund et al GIE 2006

⁵ Isayama H et al. Gut 2004

⁶ Yoon et al. GIE 2006

⁷ Hausegger KA, et al AJR Am J Roentgenol. 1998

⁸ Ahmad et al. Endoscopy 2002

⁹ Yoon et al. GIE 2006

¹⁰ Moss AC et al, Cochrane Library 2006

It is the science dealing with the application of information on physical and psychological characteristics to the design of devices and systems for human use.

Something that is 'ergonomic' is designed for safe, comfortable, and efficient use.

The word "ergonomics" was coined in 1949 by the British scientist K.F.H. Murrell who put it together from the Greek "ergon" (meaning "work") and "nomos" (meaning "law").

The foundations of the science of ergonomics appear to have been laid within the context of the culture of Ancient Greece. A good deal of evidence indicates that Hellenic civilization in the 5th century BC used ergonomic principles in the design of their tools, jobs, and workplaces. One outstanding example of this can be found in the description Hippocrates gave of how a surgeon's workplace should be designed.

The science of Ergonomics is becoming increasingly important as a requirement to ensure safe, comfortable and efficient working.

In the field of Endoscopy Cook Medical recognises the ergonomic needs of the clinical team and especially those of nurses and as such designs with those needs in mind. All day nurses are dealing with different kinds of interventional products that allow them place stents, cut polyps, take biopsies, and dilate strictures and so on.

The hands of the nurse are the most important tool in these interventional procedures.

Ergonomic Design is concerned with designing according to human needs, and applies theory, principles, data and methods to design in order to optimize human well-being and overall system performance. Ergonomic research contributes to the design and evaluation of tasks, jobs, products, environments and systems in order to make them compatible with the needs, abilities and limitations of people.

There are five aspects of ergonomics, safety, comfort, ease of use, productivity/performance, and aesthetics. Based on these aspects of ergonomics, examples are given of how products or systems could benefit from redesign based on ergonomic principles.

1. Safety - Medicine bottles: The print on them could be larger so that a sick person who may have impaired vision (due to sinuses, etc.) can see the dosages and label more easily. Ergonomics could design the print style, color and size for optimal viewing.
2. Comfort - Alarm clock display: Some displays are harshly bright, drawing one's eye to the light when surroundings are dark. Ergonomic principles could redesign this based on contrast principles.
3. Ease of use - Street Signs: In a strange area, many times it is difficult to spot street signs. This could be addressed with the principles of visual detection in ergonomics.
4. Productivity/performance - HD TV: The sound on HD TV is much lower than regular TV. So when you switch from HD to regular, the volume increases dramatically. Ergonomics recognizes that this difference in decibel level creates a difference in loudness and hurts human ears and this could be solved by evening out the decibel levels. Voicemail instructions: It takes too long to have to listen to all of the obvious instructions. Ergonomics could address this by providing more options to the user, enabling them to easily and quickly skip the instructions.
5. Aesthetics - Signs in the workplace: Signage should be made consistent throughout the workplace to not only be aesthetically pleasing, but also so that information is easily accessible for all signs

ANTHROPOMETRICS.

It is the science dealing with the measurement of the size, weight, and proportions of the human body. Anthropometrics was first used in the 19th and early 20th century in criminalistics for identifying criminals by facial characteristics. Alphonse Bertillon was a French law enforcement officer and biometrics researcher who created anthropometry in 1882.

In order to deliver you safe, comfortable products which are easy and efficient to use we compile data from the fields of ergonomics and anthropometrics and include it at the earliest stages of a design brief.

This means that new products you will see in the future and those that you have seen in the last few years have had the size, weight, and proportions of the human body taken into consideration during development.

Cook Medical considers ergonomics to be of vital importance and we want to work closely with you to continue to develop products for you to make the procedures you perform every day more safe and comfortable.

Complications of EMR and ESD and their prevention

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Mucosectomy is a partial-thickness resection of the bowel wall. The resection plane is in the submucosa at the junction to the muscularis propria. A lesion on the mucosal surface of the GI tract (e.g., a sessile polyp) may require removal because it is (1) causing clinical problems (e.g., bleeding, obstruction), (2) thought to be malignant or pre-malignant, or (3) of uncertain etiology in which case removal will facilitate diagnosis. A lesion should be resected, and if possible endoscopically, (4) it can be done safely, and (5) in the case of malignant and premalignant lesions, complete resection can be guaranteed. To guarantee complete removal of a malignant lesion (1) it must be noninvasive and (2) it cannot have spread beyond the bowel wall - it must be localized. Endoscopic mucosal resection (EMR) was first reported by Tada et al in Japan in the 1980s and later revised into its current form by Inoue et al. In this form, four techniques are commonly used: (1) the inject and cut; (2) the inject, lift, and cut; (3) cap-assisted endoscopic mucosal resection (EMRC); and (4) endoscopic mucosal resection with ligation (EMRL). Larger lesions may require piecemeal resection using one of the 4 techniques. Lesions are resected with EMR using a 3-stage process (1) identification of the lesion with chromoendoscopy or advanced imaging techniques, (2) separation of the lesion by submucosal injection of a fluid cushion, and (3) resection of the lesion with one of the described 4 techniques. Endoscopic submucosal dissection (ESD) is an evolution of EMR, which allows resection of much larger lesions en bloc. ESD was first developed by Dr Ono in Japan in 2001. Like EMR, ESD relies on mechanical dissection along the submucosal plane to completely excise lesions of almost any size. Various dissection tools have been developed which all share the property of being capable of lateral dissection and pulling the tissue away from the deeper muscularis layer. All use diathermy coagulation and cutting current to both cut and cauterize blood vessels. Typically a neoplastic lesion is identified using chromoendoscopy or advanced endoscopic imaging methods, followed by injection of the submucosal fluid to separate the lesion from the muscularis. A circumferential cut is made just outside the borders of the neoplasia, followed by submucosal dissection from one side of the lesion to the other until it is completely excised. Virtually any superficial lesion within the gastrointestinal tract can, in theory, be resected by ESD. The major limitations of ESD are the high degree of technical skill required for safe and effective resection, the long procedure time (in some cases up to 5–6 hours), and higher complication rates. Although both EMR and ESD have now become the standard of care for early gastric neoplasia in Japan, their safety and efficacy are only recently being evaluated in a few specialized centers in the West. The indications and clinical effectiveness of EMR and ESD have been extensively documented in observational trials.

Complications.

EMR/ESD for complex lesions is generally performed during a separate session from the initial diagnostic endoscopy giving the patient and physician time to discuss and consider the risks and benefits of EMR and

alternative treatment modalities. Complications include pain, bleeding, perforation, and stricture formation. Bleeding is the most common complication of EMR and ESD, with rates reported ranging from 1% to 45% with average rates of 10% in larger series. Most bleeding is observed during the procedure or within the first 24 hours. Delayed bleeding has been reported in up to 13.9% of patients. Familiarity with the techniques of endoscopic hemostasis is a prerequisite for performance of EMR/ESD. Endoscopic clipping is often used because of the potential perforation risk with other therapies. Reported perforation rates during ESD (4%-10%) are much higher compared with EMR (0.3%-0.5%). Small perforations recognized during the procedure can be successfully sealed with endoscopic clips. Large perforations require urgent salvage surgery to prevent peritonitis. Stenosis has been reported in 6% to 26% of patients after endoscopic removal of esophageal lesions and in 3.3% after removal of gastric (prepyloric) lesions. These strictures are more common after removal of large lesions occupying more than 75% of the esophageal circumference and usually can be successfully treated by endoscopic dilation. Endoscopic removal of lesions affecting the major duodenal papilla is associated with an increased risk of postprocedure pancreatitis, which may be reduced by prophylactic stenting of the pancreatic duct. Postpapillectomy bleeding is another frequent complication and argon plasma coagulation can be used to control bleeding and may be helpful as an adjunctive therapy to destroy residual adenomatous tissue.

Prevention of complications

Detect the lesion early, make a precise pretreatment diagnosis, ensure that the patient has the correct indication for EMR/ESD and have the skills to perform EMR/ESD. Acquire the skills necessary to perform EMR/ESD (hands-on training on live pigs or pig models, basic knowledge from books or video materials, participating in live demonstration seminars). For EMR/ESD to be safe and reliable, it is important to develop an appropriate strategy for the procedure. In essence, the strategy should be aimed at maintaining mucosal elevation during the procedure. Selecting the appropriate tools, using transparent hoods wisely, employing a good strategy that uses gravity, and having good control of bleeding.

Suggested reading.

1. Yamamoto H. Technology insight: endoscopic submucosal dissection of gastrointestinal neoplasms. *Nat Clin Pract Gastroenterol Hepatol.* 2007 Sep;4(9):511-20. Review.
2. Ahmadi A, Draganov P. Endoscopic mucosal resection in the upper gastrointestinal tract. *World J Gastroenterol.* 2008 Apr 7;14(13):1984-9.
3. ASGE TECHNOLOGY COMMITTEE, Kantsevoy SV, Adler DG, Conway JD, Diehl DL, Farraye FA, Kwon R, Mamula P, Rodriguez S, Shah RJ, Wong Kee Song LM, Tierney WM. Endoscopic mucosal resection and endoscopic submucosal dissection. *Gastrointest Endosc.* 2008 Jul;68(1):11-8.
4. Wallace MB. Intraluminal endoscopic surgery: the Scioto returns. *Gastroenterology.* 2007 Mar;132(3):848-52.

Endoscopic treatment of high-grade dysplasia and mucosal Barrett's cancer: time to swing the pendulum.

Jacques Bergman, MD PhD,

The last years we have seen a gradual increase in the number of publications on the endoscopic treatment of high-grade dysplasia (HGD) and mucosal cancer in patients with a Barrett esophagus (BE). Ell et al. reported on the endoscopic treatment of 100 consecutive patients with the following characteristics: macroscopic types I, IIa, IIb or IIc, a lesion diameter up to 20-mm, a mucosal lesion without lymph or vascular invasion, and histological grades G1 or G2 (1). All patients were treated with endoscopic resection using the "suck-and-cut" technique without technical problems or major complications and complete local remission was achieved in 99 of the 100 patients. During a mean follow-up period of 37 months, recurrent carcinomas were found in 11% of the patients; again in all cases successfully treated with repeat endoscopic resection. The calculated 5-year survival rate was 98%; 2 patients died of unrelated causes (1). These results have been confirmed by other series, all showing that endoscopic resection of early Barrett's neoplasia is safe and effective in expert hands (2-5). Given these excellent results, why is endoscopic treatment not fully accepted as the treatment of choice for mucosal Barrett's neoplasia? Why are most patients with this disease still advised to undergo surgical treatment, which is associated with a 30-day mortality of 5-10% and significant morbidity in 40-50% of cases? Most antagonists of endoscopic treatment focus their critique on three points: 1) available series have a limited length of follow-up, 2) endoscopic resection of a focal abnormality in a Barrett's segment is associated with a high rate of metachronous lesions, and 3) all studies so far come from expert centres and results may be different in low-volume centers. Let us deal with these three issues in a point by point manner:

1) Indeed, only a limited number of studies are available that provide long-term follow-up after endoscopic resection of mucosal Barrett's cancer. As mentioned, the Wiesbaden study reported a calculated 5-year survival rate of 98% with all deaths being due to unrelated causes (1). One might argue that, given the early presentation of these lesions and their anticipated natural history, a 5-year survival rate may not be enough to tell the whole story (6). Although conceptually this may be valid, I would argue against it for two reasons. First, the endoscopic treatment of early Barrett's neoplasia in the Western world has been preceded by the endoscopic treatment of early gastric cancer and early squamous esophageal cancer in Japan, where the long-term results (i.e. > 5-10 years) have led to accepting endoscopic resection as the treatment of choice for these indications. The selection criteria used by the Wiesbaden group as well as the resection techniques applied are all based on the experience of endoscopic treatment for gastric and squamous esophageal neoplasia. It is therefore unlikely that studies with a more prolonged follow-up will show a different outcome. Second, even if there is a delayed mortality after endoscopic treatment of Barrett's neoplasia that is going to occur after more than 5 year follow-up, it is unlikely to balance the related mortality of the other treatment alternative for this indication: surgical esophagectomy, which is associated with a 30-day mortality rate of 5% (in expert centres), significant complications in 50%, and the permanent loss of a functional esophagus.

2) Antagonists of endoscopic resection for early Barrett's cancer have also argued that the endoscopic removal of a Barrett's cancer deals with only part of the problem since genetic abnormalities in the remaining Barrett's mucosa will lead to recurrent disease during follow-up. With proper patient selection, however, the recurrence rate in the remaining Barrett's segment (11% during a mean follow-up of 37 months) is much lower than the reported 25-30% rate in previously published series (2, 7). It is important to stress that these recurrences generally are effectively treated endoscopically (2, 7). Nevertheless, it underlines the importance of a strict endoscopic follow-up in order to detect and treat any recurrent lesions at an early stage. Ideally, the endoscopic treatment of early Barrett's neoplasia should not only lead to a removal of the most advanced lesion but to a removal of all columnar mucosa at risk for

malignant degeneration. Stepwise radical endoscopic resection of the whole Barrett segment, a treatment in which the Barrett's segment is completely resected in 2 to 3 procedures, may achieve this purpose (4, 5, 8). Our group has shown that this effectively removes the early neoplasia as well as the remainder of the Barrett's segment with so far no recurrences occurring during a median follow-up of 13 months (8, 9). Furthermore, the neosquamous mucosa that regenerates after this treatment appears to have none of the genetic abnormalities that were present in the Barrett's segment prior to treatment (9). However, this stepwise radical endoscopic resection protocol is associated with a 30 to 40% rate of esophageal stenosis due to scarring that, although usually easily managed by endoscopic dilatation, is cumbersome for the patient. In addition, esophageal scarring may make subsequent resections difficult and a higher level of endoscopic expertise is required for this treatment regimen than for the endoscopic resection of focal Barrett's lesions (4, 5, 8).

It may not be absolutely necessary to resect the entire Barrett segment in order to prevent recurrent lesions. Ablative therapy, as an adjunct to endoscopic resection, may also reduce the risk of recurrences. Argon plasma coagulation (APC) and photodynamic therapy (PDT) are the techniques that have been most widely used for this purpose. APC and PDT both have their drawbacks in terms of complications (e.g. esophageal stenosis), incomplete removal of Barrett's mucosa, subsquamous residual Barrett's mucosa, and persisting genetic abnormalities (10-15). However, a new endoscopic ablation technique, balloon-based radiofrequency ablation, has become available that appears to have overcome most of these drawbacks (16, 17). This ablation system uses an over-the-wire ablation balloon (HALO360+, BARRX Medical, Sunnyvale, CA, USA) with a 3-cm long bipolar electrode on its outer surface and an energy generator for a high-power and rapid (< 1 sec.) delivery of a preset amount of radiofrequency energy density to the electrode for quick and effective circumferential ablation. A focal ablation catheter (HALO90), using the same electrode array, is available for ablation of residual BE that remains after primary circumferential ablation. Recent studies have shown that this technique is remarkably effective in removing HGD and residual non-dysplastic BE after prior endoscopic resection, without causing thermally related stenosis or subsquamous residual BE.

3) The third issue that may prohibit the widespread use of endoscopic resection of mucosal Barrett's cancer is the importance of endoscopic expertise. Indeed, most endoscopic treatment regimens require a certain level of expertise and few endoscopists have had proper training in the use of mucosal resection techniques. New resection techniques, however, are now available that are technically easier to use. The multi-band mucosectomy device, which combines the use of a multi-band variceal ligation device to "suck-and-band" areas of interest without submucosal lifting followed by removal of the created pseudopolyp by a standard polypectomy snare, may open up this field to the general endoscopist (5, 18).

It should be born in mind that the actual endoscopic treatment of an early Barrett's lesion is only part of the overall management strategy. Optimal detection and delineation of the neoplastic lesion requires the use of high-resolution endoscopy and experience in the recognition of the often subtle abnormalities associated with such lesions. Furthermore, the histopathological evaluation of endoscopic resection specimen may be difficult. The argument that a certain level of expertise is needed for safe and effective treatment of early Barrett's neoplasia is therefore a valid one. The relevance of experience, however, holds even stronger for the surgical alternatives in these patients: the adjusted 30-day mortality rate of esophagectomy in the United States varies from 8.4% for surgeons performing >20 esophagectomies per year, to 16.2% for those performing 5-7 esophagectomies per year to an unacceptable mortality rate of 20.3% in those that do less than 2 cases a year; and more than 55% of all esophagectomies are performed in low volume centers (<7 cases per year) (19, 20). If experience, therefore, comes into the equation for comparing endoscopic treatment with surgical esophagectomy, this should go for both sides. Instead of arguing on which of the two treatment options the operator's (in)experience has the most profound effect, we should ensure optimal training and certification of the clinicians involved. In the Netherlands, where the endoscopic treatment of selected Barrett's patients with early neoplasia is now considered the treatment of choice, we have therefore started an endoscopic training program for detection and treatment of early neoplasia in the upper gastrointestinal tract in which endoscopists, endoscopy nurses and pathologists will be trained and this program has recently been expanded for selected European centers as well (www.endosurgery.eu).

In summary, endoscopic resection for mucosal cancer in Barrett's esophagus is effective and safe. Long-term follow-up suggests that its 5-year related mortality is less than the 30-day mortality of esophagectomy. Radiofrequency ablation is the complementary partner of endoscopic resection for removal of flat residual BE after prior endoscopic resection of visible abnormalities. Under no circumstances, these short- and long-term effects can be matched by surgery - often forgotten is the fact

that all surgical possibilities still remain, should they become necessary. These results in treatment of mucosal Barrett's cancer are paralleled by the excellent long-term results from Japan after endoscopic resection for early gastric or squamous esophageal cancer. It is therefore time to embrace the endoscopic treatment of early Barrett's cancer as the treatment of first choice, provided that it is performed in a center that is properly equipped for endoscopic imaging, resection, and follow-up as well as with experience in the histopathological evaluation of the resected specimens. Sending a patient with a mucosal Barrett's cancer for esophagectomy without at least informing him on the possibility to be treated endoscopically in such a center, is in my opinion inappropriate. It is time to swing the pendulum towards endoscopic treatment for this indication.

Reference List

- (1) Ell, C., May, A., Pech, O., Gossner, L., Guenter, E., Behrens, A., Nachbar, L., Huijsmans, J., Vieth, M., Stolte, M. Curative endoscopic resection of early esophageal adenocarcinomas (Barrett's cancer). *Gastrointest Endosc* 2007;**65**(1):3-10.
- (2) Peters FP, Kara MA, Rosmolen WD *et al.* Endoscopic treatment of high-grade dysplasia and early stage cancer in Barrett's esophagus. *Gastrointest Endosc* 2005;**61**(4):506-14.
- (3) Buttar NS, Wang KK, Lutzke LS *et al.* Combined endoscopic mucosal resection and photodynamic therapy for esophageal neoplasia within Barrett's esophagus. *Gastrointest Endosc* 2001;**54**(6):682-8.
- (4) Seewald S, Akaraviputh T, Seitz U *et al.* Circumferential EMR and complete removal of Barrett's epithelium: a new approach to management of Barrett's esophagus containing high-grade intraepithelial neoplasia and intramucosal carcinoma. *Gastrointest Endosc* 2003;**57**(7):854-9.
- (5) Seewald, S., Omar, S., Groth, S., Seitz, U., Weerth, A de., Zhong, Y., Thonke, F., Schroeder, S., and Soehendra, N. A novel multiband mucosectomy device facilitates circumferential endoscopic mucosal resection in Barrett's esophagus with early malignant changes. *Gastrointest Endosc* 2005;**61**(5), AB80.
- (6) Spechler SJ. Dysplasia in Barrett's esophagus: limitations of current management strategies. *Am J Gastroenterol* 2005;**100**(4):927-35.
- (7) May A, Gossner L, Pech O *et al.* Local endoscopic therapy for intraepithelial high-grade neoplasia and early adenocarcinoma in Barrett's oesophagus: acute-phase and intermediate results of a new treatment approach. *Eur J Gastroenterol Hepatol* 2002;**14**(10):1085-91.
- (8) Peters FP, Kara MA, Rosmolen WD *et al.* Stepwise radical endoscopic resection is effective for complete removal of Barrett's esophagus with early neoplasia: a prospective study. *Am J Gastroenterol* 2006;**101**(7):1449-57.
- (9) Peters, F. P., van Baal, J. W., Rygiel, A. M., Curvers, W. L., Rosmolen, W. D., Fockens, P., ten Kate, F. J., Krishnadath, K. K., and Bergman, J. J. Stepwise Endoscopic Resection of the Whole Barrett's Esophagus in Patients with Early Neoplasia Effectively Removes All Genetic Alterations from the Esophageal Epithelium. *Gastroenterology* 2006; **130**: A129.
- (10) Overholt BF, Lightdale CJ, Wang KK *et al.* Photodynamic therapy with porfimer sodium for ablation of high-grade dysplasia in Barrett's esophagus: international, partially blinded, randomized phase III trial. *Gastrointest Endosc* 2005;**62**(4):488-98.
- (11) Overholt BF, Panjehpour M, Halberg DL. Photodynamic therapy for Barrett's esophagus with dysplasia and/or early stage carcinoma: Long-term results. *Gastrointest Endosc* 2003;**58**(2):183-8.
- (12) Krishnadath KK, Wang KK, Taniguchi K *et al.* Persistent genetic abnormalities in Barrett's esophagus after photodynamic therapy. *Gastroenterology* 2000;**119**(3):624-30.
- (13) Peters F, Kara M, Rosmolen W *et al.* Poor results of 5-aminolevulinic acid-photodynamic therapy for residual high-grade dysplasia and early cancer in Barrett esophagus after endoscopic resection. *Endoscopy* 2005;**37**(5):418-24.
- (14) Sampliner RE. Prevention of Adenocarcinoma by Reversing Barrett's Esophagus with Mucosal Ablation. *World J Surg* 2003.
- (15) Bergman JJ, Fockens P. Ablating Barrett's metaplastic epithelium: are the techniques ready for clinical use? *Gut* 2006;**55**(9):1222-3.
- (16) Gondrie, J.J., Pouw, R.E., Sondermeijer, C.M., Peters, F.P., Curvers, W.L., Rosmolen, W.D., Krishnadath, K.K., Ten Kate, F., Fockens, P., Bergman, J.J. Stepwise circumferential and focal ablation of Barrett's esophagus with high-grade dysplasia: results of the first prospective series of 11 patients. *Endoscopy* 2008;**40**(5):359-69.
- (17) Gondrie, J.J., Pouw, R.E., Sondermeijer, C.M., Peters, F.P., Curvers, W.L., Rosmolen, W.D., Ten Kate, F., Fockens, P., Bergman, J.J. Effective treatment of early Barrett's neoplasia with stepwise circumferential and focal ablation using the HALO system. *Endoscopy* 2008;**40**(5):370-9.
- (18) Peters, F. P., Curvers, W. L., Kara, M. A., Rosmolen, W. D., ten Kate, F. J., Krishnadath, K. K., Fockens, P., and Bergman, J. J. Widespread mucosal resection in Barrett's esophagus using multi-band mucosectomy: feasibility study of 79 procedures. *Gastrointestinal Endoscopy* 2006;**63**(5): AB223.
- (19) Birkmeyer JD, Siewers AE, Finlayson EV *et al.* Hospital volume and surgical mortality in the United States. *N Engl J Med* 2002;**346**(15):1128-37.
- (20) van Lanschot JJ, Hulscher JB, Buskens CJ *et al.* Hospital volume and hospital mortality for esophagectomy. *Cancer* 2001;**91**(8):1574-8.