ducting endoscopic examination more frequently than recommended might not be cost effective.

P.09.11

EVALUATION OF GASTROPANEL IN GASTRIC CANCER (GC) PATIENTS, FIRST-DEGREE RELATIVES AND AUTOIMMUNE CHRONIC ATROPHIC GASTRITIS (ACAG)

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Background and aim: In the absence of biomarkers for the detection of GC, a screening program to identify individuals at high risk would include the evaluation of markers such as the Gastropanel. An evaluation of the accuracy of Gastropanel to screen first-degree relatives of GC patients and patients with CAG is necessary for examining the serological differences of the gastric mucosa in these two high-risk categories of patients compared to individuals with GC.
Material and methods: 182 consecutive patients (85 M, 97 F) were enrolled in the study since 2009. In 66 patients with GC (mean age 62.9), 44 with ACAG (mean age 55.1) and 72 first-degree relatives (mean age 46.3) serum levels of PG I, PG II, G-17 and PGI/II ratio were assessed. GC have been classified by localisation and Laurèn type, while OLGA classification system has been applied for staging CAG. In every histological sample the presence of intestinal metaplasia (IM) and the H. pylori status have been investigated and the association of clinicopathologic characteristics with serological values have been statistically analyzed.
Results: 16.7% of patients with confirmed GC had a positive family history of GC. There was a statistically significant difference in PGI median levels in cancer group, gastritis group and first-degree relatives group (respectively 179.0 ng/mL, 24.3 ng/mL, 105.9 ng/mL, p=0.0003); in particular, patients with diffuse type GC had 1.51-fold higher PGI levels compared to those with intestinal type (237.2 ng/mL vs. 157.3 ng/mL) and also PGI/II ratio resulted higher (7.6 vs. 6.7). In patients affected with cancer with IM in the stomach both PGI and PGI/II levels resulted lower than patients with cancer without IM (125.2 ng/mL vs. 214.0 ng/mL). Furthermore, patients with ACAG and IM had significantly lower PGI (12.8 ng/mL vs. 51.7 ng/mL) and PGI/II ratio (2.1 vs. 4.9) than patients without IM. 38.9% of first-degree relatives had an active H. pylori infection, 9.7% demonstrated to have IM in the stomach and 6.8% showed the concurrent presence of atrophy and H. pylori infection with a negative PGI value ($>$70 ng/mL).
Conclusions: Our data showed a high prevalence of positive family history of GC in cancer group. In addition, PGI level was significantly higher in diffuse type compared to intestinal type GC. The combinatorial approach of Gastropanel and risk factors may be helpful to identify high-risk patients for GC.

P.09.12

FLEXIBLE ENDOSCOPIC MYOTOMY OF ZENKER DIVERTICULUM: FEASIBILITY, LONG-TERM CLINICAL EFFICACY, AND PROGNOSTIC VARIABLES OF CLINICAL SUCCESS OF THE DIVERTICULOSCOPE-ASSISTED TECHNIQUE

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Background and aim: Flexible endoscopy is the less invasive approach to myotomy of Zenker diverticulum (ZD) but lacks of technique standardization and prospective data. To prospectively assess feasibility and long-term clinical results of flexible endoscopic diverticuloscope-assisted (feDA) myotomy.
Material and methods: Since 2005, all patients with ZD afferent to a tertiary center were prospectively enrolled. The study analyzed: 1) feasibility and safety of feDA myotomy; 2) clinical efficacy and prognostic variables in patients with a follow-up $\geq$24 months. Endotherapy consisted in exposure and stabilization of the ZD septum by a soft diverticuloscope (Cook Endoscopy), myotomy by a needle-knife in a single session. Symptoms were differentiated in dysphagia, regurgitation, respiratory and nocturnal. Severity was scored form 0 to 3 according to frequency (days/week).
Primary outcomes were: diverticuloscope placement, complete myotomy, complications, clinical success defined as the disappearance of all symptoms or persistence of a maximum of 2 symptoms of grade 1. Secondary outcome was clinical improvement: $\geq$2/3 reduction of pre-treatment total symptom score. Age, duration and total score of symptoms, ZD and residual pouch size, were considered as prognostic variables for clinical success. Clinical follow-up was scheduled after 1 and every 6 months.
Results: A total of 101 patients were included. Diverticuloscope placement and complete myotomy were achieved in 100 (99%). Complications occurred in 3 (3%) patients: 1 intraprocedural bleeding; 1 delayed bleeding; 1 perforation. There was no mortality.
A total of 57 patients were included for clinical evaluation. Clinical success and improvement rates at 1 and 43 months after treatment were: 87% and 53%, 93% and 57%, respectively.
Univariate analysis showed that residual pouch $\leq$15 mm and ZD $<$50 mm were prognostic factors for clinical success at 1 month (OR 6.33, 95% CI 1.08–36.66). Kaplan-Meier curves for clinical success demonstrated significant different patterns according to residual pouch.
Conclusions: feDA-myotomy is feasible with a very low rate of major complications. Clinical improvement is achieved in almost 2/3 of cases, and clinical success rate is significantly higher if myotomy is performed in patients with ZD $<$50 mm and residual pouch is $\leq$15 mm after myotomy.

P.09.13

COMORBIDITIES IN IDIOPATHIC ACHALASIA: A PHENOTYPIC APPROACH TO DRIVE GENETIC ASSOCIATION STUDIES?

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Background and aim: There is evidence that idiopathic achalasia has a genetic background and a significant association with several genetic polymorphisms has been indeed described. A given genetic background may affect the phenotypic manifestations of the disease and may account for the presence of contemporary complex diseases. Our aim is to provide a proof of concept study to evaluate comorbidities in achalasia patients, in order to drive future genetic association studies.
Material and methods: The study population consisted of 162 patients (69 males, mean age 55$\pm$16 years) with proven clinical and instrumental diagnosis of idiopathic achalasia. Gender and age matched subjects selected from the outpatient clinic and referring of esophageal disorders other than achalasia, served as controls. All patients were investigated for the presence of comorbidities (autoimmune diseases, endocrinopathies, hematologic diseases and cardiopathies and neoplasms). Given the high incidence in the general population, type II diabetes, hyperlipidemia and blood hypertension were recorded too.
Results: The overall prevalence of comorbidities was similar in achalasia and control patients (62% vs 57%, respectively). Presence of comorbidities did not significantly affect disease's phenotype as the age of disease onset was similar in achalasia patients with and without comorbidities (46$\pm$21 vs. 49$\pm$16 years, respectively, p=NS). Blood hypertension, cardiopathies, hyperlipidemia, endocrinological and autoimmune disorders were the most frequently observed comorbidities in achalasia and controls (20 vs 30%, 10 vs 7%, 17% vs 31%, 8% vs 17% and 8% vs 5%, respectively p=all NS). In addition hematological disorders and type II diabetes were similarly prevalent in the two groups.
Conclusions: We showed for the first time the type and the frequency of comorbidities in a large series of achalasia patients and we showed that their prevalence is similar to that of a matched control population. Although larger epidemiological studies are needed to confirm our data, our results indicate

that the putative genetic factors associated with achalasia are specific for this disease.

P.09.14

ENDOSCOPIC TREATMENT OF ZENKER'S DIVERTICULA WITH SEPTUM REMOVAL: DESCRIPTION AND PRELIMINARY RESULTS OF A NEW TECHNIQUE

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Background and aim: Flexible endoscopy has been introduced as an option for the treatment of Zenker's diverticula, by dividing the septum between the esophagus and the pouch. The incision can be made using a needle knife or, alternatively, argon plasma coagulation or a hook knife, usually with a single incision of the septum. The aim of this study is to assess the feasibility and outcome of a new technique, with the removal of the septum by two incisions, to avoid the healing of the site of incision with septum recurrence.
Material and methods: Two lateral incisions were performed and the tissue between the two cuts was removed with a polipectomy snare. 28 patients underwent flexible endoscopic treatment. Nineteen patients (68%, group A) underwent a single incision of the septum, while 9 (32%, group B) were treated with a double incision. Median age was 73 (55–86) years for group A and 77 years (59–86) for group B; ten (52%) were males and 9 (48%) females in group A, 7 (77%) were males and 2 (23%) were females in group B.
Median preoperative symptoms score was 10 (0–22) in group A and 9 (0–20) in group B, according to dysphagia and regurgitation severity and frequency. The median size of the pouch was 20 mm (10–50 mm) in both groups. All patients were evaluated for symptoms using a detailed questionnaire and they had preoperative barium swallow.
Results: All patients underwent division of the septum with a mean of 2 (1–3) sessions for group A and 1 session for group B (1–2). A microperforation occurred in only a patient (5.2%) in group A, there were not complications in group B. The median follow-up was 58 months (7–102) for group A and 7 months (5–24) for group B.
After our treatment, in 16 patients (84%) of group A symptoms disappeared or improved significantly, while three patients (16%) had a poor result, one and which required a surgical revision with diverticulectomy. In group B all patients had a good result. The mean postoperative symptoms score was 3.3 in group A (0–13) and 0.7 (0–3) in group B.
Conclusions: Our data suggest that performing a double incision of the diverticular septum might increase the success of treatment, with the limitation of the small number of patients and the short follow-up of cases treated with the new technique.

P.09.15

ACHALASIA TREATMENT IMPROVES SPECIFIC SYMPTOMS AND QUALITY OF LIFE: VALIDATION OF AN ACHALASIA SPECIFIC QUALITY OF LIFE QUESTIONNAIRE

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Background and aim: Therapies for achalasia aim to patients' symptom relief, but they affect patient's quality of life (QoL), too. An ad hoc questionnaire evaluating both achalasia-related symptoms and disease related QoL is lacking.
Aim: To validate a disease specific QoL questionnaire in perspectively evaluated Italian achalasia patients.
Material and methods: 22 consecutive achalasia patients (4 men, age range 19–86 years) were included in the study. At baseline a structured questionnaire was used to evaluate both esophageal symptoms and disease specific QoL. Questionnaire graded achalasia-related symptoms severity (dysphagia for solids and liquids, food regurgitation, chest pain, nocturnal cough) from 0 to 3, based on their impact on daily activities. Also a disease specific QoL was evaluated by a self administred questionnaire, the AE-18, that investigated four domains (physical, psychological and social functioning, and sleep disturbance). Scores for each item range from 1 ("always") to 5 ("never"); higher scores corresponding to better quality of life. All patients were questioned before, 1 and 6 months after a specific treatment regimen, that according to patients clinical status consisted in pneumatic dilation, botulinum toxin injection or surgical myotomy.
Results: Patients within each specific treatment groups were the following (3/22 surgical myotomy, 14/22 pneumatic dilation and 5/22 Botox injections, respectively. In the table are reported the baseline demographics and achalasia-related symptoms' severity and QoL (data are expressed as mean±SD) within each treatments group.

Table 1

	Surgery group	Dilation group	Botox group	p
Age at diagnosis	42.3±6.5	42.3±13	81.8±4.8	<0.001
Age at onset of symptoms	39.3±7.5	40.3±12.4	80.8±5.6	<0.001
Dysphagia for solids	2.7±0.6	2.2±0.7	2.2±0.5	0.5
Dysphagia for liquids	2.0±1.0	2.1±0.7	2.2±0.5	0.9
Regurgitation of undigested food	1.0±1.7	0.7±0.8	0.6±1.3	0.8
Chest pain	0.7±1.1	1.1±1.1	1.0±1.4	0.8
Nocturnal cough	1.3±1.5	1.3±1.2	1.0±1.4	0.9
AE-18 total score	54±14	53±12	53±11	0.9

At both 1 and 6 months of the follow-up, the severity mean scores of dysphagia achalasia-related symptoms severity were significantly reduced compared to baseline ($p<0.05$). Similarly, the AE-18 total score was significantly improved ($p<0.001$).
Conclusions: We showed that therapy-induced improvement of achalasia-related symptoms correlate with a significant improvement of patients quality of life as assessed by a specific questionnaire.

P.09.16

A YOUNG WOMAN WITH DYSPHAGIA

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Background and aim: Plummer-Vinson syndrome is characterized by a classical triad of dysphagia, iron deficiency anemia and esophageal webs. Epidemiologic data are fragmentary: the syndrome is rare, most of the patients are white women in the fourth to seventh decade of life. Etiopathogenesis is unknown; the most likely etiological factors are iron deficiency and malnutrition. Dysphagia is usually painless, intermittent or progressive over years and selective for solids. Additional features are glossitis, angular cheilitis and koilonychia. Since Plummer-Vinson syndrome is associated with an increased risk of upper alimentary tract cancers, the follow-up programme must be regular, strict and life-long. We here describe a rare case of Plummer-Vinson syndrome in a young woman.
Material and methods: A 18-year old girl from Ivory Coast was admitted to a gastroenterology outpatient clinic for the evalutation of a seven-month history of dysphagia for solids, chest pain, and vomiting. The past medical history was recorded. Hematochemical parmeters were evaluated. A barium swallow and an esophagogastroduodenoscopy (EGD) were performed.
Results: The symptoms had been progressive, and were worsening in frequency and intensity. Inquiry into her dietary intake found that she was strictly vegetarian and she reported heavy menstruation bleedings. Laboratory tests revealed a severe microcytic anaemia (haemoglobin 5.7 g/dL; mean corpuscolar volume 44.2 fL), with decreased iron stores (plasma ferritin 2 ng/mL). A stained film of peripheral blood showed hypochromia, microcytosis and mild poikilocytosis. A barium swallow showed a constriction of the proximal esophagus and the EGD confirmed the presence of an upper esophageal web, which was fractured using dilators. Workup for anemia (including measurement of anti-tissue transglutaminase antibodies, stool examination for occult blood, gynecological evaluation) was negative, except a mild increase of hemoglobin C. A diagnosis of Plummer-Vinson syndrome was assessed and intravenous iron supplementation was prescribed.