Natural Course of Eosinophilic Esophagitis

To investigate the natural course of EoE and to evaluate the association between undiagnosed disease and the occurrence of complications over two decades in a large cohort, retrospective analysis of charts of patients diagnosed with EoE between 1996 and 2015 was carried out, collecting information from 15 hospitals throughout the Netherlands. Histologic, clinical, and endoscopic characteristics were identified and stratified by age and diagnostic study.

A total of 721 patients (524 males, 117 children), were included. Dysphagia and food impactions were more common in adults, whereas children more often presented with vomiting and abdominal pain.

The prevalence of fibrotic endoscopic features was higher in adults (76%) than in children (39%). As time with undiagnosed disease progressed, the percentage of patients with strictures and food impactions increased from 19% and 24% to 52% and 57% from a delay of less than 2 years to greater than 21 years, respectively.

In a multivariate logistic regression model, diagnostic delay (OR 1.09) and male gender (OR 2.69), were the major risk factors for stricture presence.

It was concluded that during the natural course of EoE, progression from an inflammatory to a fibrostenotic phenotype occurs. With each additional year of undiagnosed EoE, the risk of stricture presence increases 9%.

Warners, M., Oude Nijhuis, R., de Wijkerslooth, L., et al. "The Natural Course of Eosinophilic Esophagitis and Long-Term Consequences of Undiagnosed Disease in a Large Cohort." American Journal of Gastroenterology 2018; Vol. 113, June 2018, pp. 836-844.

Evaluation of Time-Dependency of Adalimumab Immunogenicity and Drug Concentrations

To determine knowledge in reference to evolution of anti-adalimumab antibodies (AAAs) over time, and correlation with clinical and inflammatory outcomes, a program for home visits was established for Crohn's disease (CD) patients. At each visit, patients' clinical scores were determined and sera were obtained for CRP, drug and AAA levels.

This cohort was compared to a parallel, prospective cohort of infliximab-treated CD patients. In a subgroup of 29 patients, trough and in-between-trough levels were compared to elucidate the importance of timing of sampling during the injection cycle.

A total of 98 CD patients starting adalimumab were prospectively followed and 621 serum samples were analyzed with 33 patients (32%) developing AAA and 18/33 (55%) of them as early as week 2, and 26/33 (79%) by week 14. Induction AAAs were strongly associated with primary non-response (OR 5.4), as compared to antibodies-to-infliximab (ATI). AAA formation rate over time was significantly lower and AAA were more specific (85% of AAA events were associated with loss-of-response, compared with 58% for ATI). In 29 patients sampled serially during an injection cycle, levels of drug in AAA seemed comparable between four time-points during a single cycle, both in patients with or without AAA.

It was concluded when followed prospectively and serially, AAAs are found to arise earlier than previously appreciated and their impact may be more pronounced for primary than secondary nonresponse. Drug and AAA levels were similar, both in trough and in-between injections, enabling to simplify therapeutic drug monitoring of adalimumab.

Ungar, B., Engel, T., Yablecovitch, D., et al. "Prospective Observational Evaluation of Time-Dependency of Adalimumab Immunogenicity and Drug Concentrations: The POETIC Study." American Journal of Gastroenterology 2018; Vol. 113, pp. 890-898.

Aspirin Chemoprevention Against Gastric Cancer

To confirm the dose-response relationship of aspirin usage and gastric cancer and to estimate the cumulative dose threshold of aspirin to achieve protective effects against gastric cancer in the general population, 461,489 individuals in a population-based, longitudinal cohort provided

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by the National Health Insurance Services in the Republic of Korea were observed from 2007 to 2012 to identify gastric cancer incident cases.

The pharmacy claims data of these individuals from 2002 to 2006 were reviewed to assess cumulative medication exposure using the defined daily dose (DDD) system. Hazard ratios (HRs) of aspirin use for gastric cancer were estimated using multivariate Cox Proportional Hazard Regression. Sensitivity analyses, including propensity-score matching and a nested case-control design were performed to evaluate the variability caused by study design.

A total of 5674 incident gastric cancers were identified from 2,965,500 person/years of followup observation, giving an overall incidence rate of 191 gastric cancers per 100,000 person/years. Compared to non-users, those with aspirin use of greater than 3 DDD years showed a statistically significant protective effect of aspirin use against gastric cancer; the adjusted HR was 0.79 and 0.63, with those of aspirin use of 3-4 DDD-years and 4-5 DDD-years, respectively.

Sensitivity analyses using propensity-score matching and a nested case-control design consistently showed a chemo-protective effect of aspirin.

It was concluded that long-term aspirin use was associated with reduced gastric cancer incidence in the general population of South Korea when the cumulative dose was greater than 3 DDD-years.

Kim, M., Chang, J., Kim, W., et al. "Cumulative Dose Threshold for Chemopreventive Effect of Aspirin Against Gastric Cancer." American Journal of Gastroenterology 2018; Vol. 113, pp. 845-854.

Complete Resection of Small Colorectal Polyps

To compare the complete resection rate of hot snare polypectomy (HSP) with that of endoscopic mucosal resection EMR for small, sessile or flat polyps, patients with 5- to 9-mm non-pedunculated colorectal polyps were prospectively randomized for the HSP or EMR group. The presence of residual polyps was assessed by performing histologic assessment of 4-quadrant forceps biopsy specimens taken from the edges of the polypectomy site. The primary outcome was complete resection rate after HSP or EMR; the secondary outcomes were the proportion of procedure-related adverse events and specimen-loss rate. Sample size was estimated using a superiority trial design.

It was assumed that the complete resection rate of the EMR group would be at least 8% higher than that of the HSP group.

A total of 382 polyps in 269 patients were assessed and randomly assigned to each method using 4x4 block randomization. Of these, 353 polyps were finally analyzed based on the pathology results. The mean polyp size was 6.3 mm. The complete resection rate did not differ between the HSP and EMR groups (88.4% vs 92.8%), respectively. The intraprocedural bleeding rate immediately after polypectomy was significantly higher in the HSP group than in the EMR group (5.2% vs 0.6%, respectively).

Clinically significant bleeding and tissue retrieval failure rates did not differ between the groups.

In the multivariate logistic regression analysis, sessile serrated adenoma/polyps or hyperplastic polyps were almost 3 times (2.8) more likely to be incompletely resected, compared with other conventional adenomatous polyps. Except for pathology, no significant independent predictors for incomplete resection were found.

It was concluded that EMR for small, non-pedunculated rectal polyps is not superior to HSP in terms of complete resection or safety. Both methods should be performed according to the endoscopist's preference.

Kim, H., Jung, H., Park, H., et al. "Hot Snare Polypectomy With or Without Saline Solution/ Epinephrine Lift for the Complete Resection of Small Colorectal Polyps." Gastrointestinal Endoscopy, 2018; Vol. 87, pp. 1539-1547.

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