

steatosis being correlated with bigger values of SWV. Positive statistical correlations have been established between AST and SWV in the group of obese children and after-chemotherapy.

**Conclusions** ARFI allows SWV quantification of the SWV in strong correlation with the fibrosis stage, the hepatic steatosis and the liver changes after chemotherapy.

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## 678 GASTROINTESTINAL TRANSIT PATTERNS IN CHILDHOOD CHRONIC CONSTIPATION

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**Background and Aims** Constipation may be a part of a generalized gastrointestinal (GI) tract disorder. Nuclear transit scintigraphy (NTS) provides transit through the stomach, small bowel, colon and anorectum. This study aimed to determine different colonic and rectal transit patterns in children with chronic constipation (CC) and their association with upper GI tract disorders.

**Methods** A retrospective analysis of NTS (1999–2011) performed in children with intractable CC. The 48-hour NTS protocol involved Gallium-67 citrate milk drink with images acquired at 0–2 hrs (gastric emptying study) and at 6, 24, 30 and 48 hrs (small bowel & colonic transit studies). The geometric centre calculation was based on % of radioactivity in each region of interest (ROI). Six ROIs were employed (1=pre-colonic, 2=ascending colon, 3=transverse colon, 4=descending colon, 5=recto-sigmoid colon and 6=toilet).

**Results** A total of 955 NTS was performed (1999–2011; 288 repeat & 667 new studies). In the 603 children (284 female, 2–23yrs, mean 8.5±4.1yrs) included for this study, 19% had normal colonic transit (NT), 52% slow colonic transit (ST) and 29% rapid proximal colonic transit (RT, Table 1). Only 1/3 of children had AR. About 20% of children had delayed gastric emptying & delayed small bowel transit.

**Conclusions** There are 3 distinct colonic transit patterns in children with CC: normal, slow & rapid. About 1/3 of children with CC had AR at 48 hrs & was associated with NT, ST and RT. In addition, 21–24% children with CC had upper GI tract transit disorders.

## 679 INFLAMMATORY CHANGES AND CERAMIDE PROFILES IN RAT LIVER AFTER FETAL ASPHYCTIC PRECONDITIONING AND PERINATAL ASPHYXIA

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**Background and Aims** Fetal (FA) and perinatal asphyxia (PA) are major causes of neonatal morbidity and death worldwide. Although most studies are focused on the brain, FA and PA are known to be associated with multi-organ disease. Therefore, as part of the systemic impact, we aimed to investigate the hepatic inflammatory response after asphyxia.

**Methods** A clinical relevant rat model was used, inducing global asphyctic insults to reflect the human pathophysiology. At different time points (acute and chronic) after FA and PA, we assessed hepatic inflammation, ceramide signaling and hepatocellular damage. Additionally, we assessed whether the combination of both insults (pre-conditioning) would have any protective effect on the liver.

**Results** FA induced significant changes in inflammatory cytokines and ceramide metabolism genes with increased interleukin (IL)-1b mRNA at 6h, increased mRNA levels of IL-6, LAG1 homolog ceramide synthase 1 and ceramide transporters at 24h and finally, increased acid sphingomyelinase and sphingomyelin synthase 1 mRNA at 96h. Also PA induced an inflammatory response, with increased IL-6 and IL-10 levels 2h after birth. The combination of FA and PA (preconditioning) attenuated the inflammatory response, reflecting comparable IL-6 and IL-10 levels as control animals. 8 months after birth, no significant differences between groups were observed in hepatic mRNA levels for all cytokines and ceramide enzymes. Nevertheless, markers for hepatocellular damage, AST and ALP, showed increased levels when animals experienced FA and PA.

**Conclusions** FA and PA induce acute changes in hepatic cytokine and ceramide levels which may lead to hepatocellular damage in later life.

## 680 INTRA-ABDOMINAL TUMORS IN CHILDREN

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**Aim** The objective of the present study was to observe the histopathological pattern of intra-abdominal tumors in children less than 15 years.

**Material and Methods** The study was carried out at the Department of Pediatric Intensive Care Unit, Heraklion, during a period of 7 years, from March 2005 to March 2012. The histopathological and demographic data of 15 intra-abdominal tumors of both sexes (8 boys and 7 girls) under 16 years of age was collected and analyzed to determine the various morphological types of intra-abdominal tumors in relation to age and sex.

**Results** Neuroblastoma was the most common tumor constituting 46.7% of all cases, followed by Wilms'tumor (26.7%), hepatoblastoma (13.2), teratoma and granulosa cell tumor (6.7%) each. Majority of the patients 73.3% were under 5 years of age.

Abstract 678 Table 1

Proximal colonic transit	Gastric emptying		Small bowel transit		Distal colonic transit	Anorectal transit	
	Normal	Delayed	Normal	Delayed	Slow	Normal	Anorectal retention (AR)
Normal (NT)	91 (15%)	23 (4%)	82 (14%)	32 (5%)	–	62 (10%)	52 (9%)
Slow (ST)	251 (42%)	63 (10%)	221 (36%)	93 (16%)	–	237 (39%)	77 (13%)
Rapid (RT)	135 (22%)	40 (7%)	156 (26%)	19 (3%)	21 (4%)	74 (12%)	80 (13%)
TOTAL	477 (79%)	126 (21%)	459 (76%)	144 (24%)	21 (4%)	373 (61%)	209 (35%)

**Conclusion** Intra-abdominal tumors are more common in males. Neuroblastoma was the most common tumor. Most of the tumors were noted in children less than 5 years of age.

**681 CLINICOPATHOLOGICAL ASPECTS OF LOWER GASTROINTESTINAL BLEEDING IN CHILDREN: A SINGLE CENTER EXPERIENCE FROM SOUTHERN IRAN**

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**Purpose** To determine the common etiologies and characteristics of lower gastrointestinal bleeding in children in southern Iran.

**Methods** This study was performed from March 2006 to March 2011 in Nemazee Hospital. All pediatric patients who referred to our center with visible lower gastrointestinal bleeding or two consecutive positive occult blood tests with at least one week interval were included in the study. The patients were categorized as neonates (1–28 days), infants (29 days–2 years), children (2–10 years) and adolescents (>10 years) and the findings were reported separately in each group. All the patients underwent colonoscopy and several mucosal biopsies were taken. Demographic and clinical information as well as colonoscopy and pathology findings were reported.

**Results** We included 363 pediatric patients with a mean age of 71.9±58.4 months, ranging from 1 to 216 months. There were 215 (59.2%) boys and 148 (40.8%) girls. The most common colonoscopy finding was sigmoid colon polyp in 91 (25.1%) patients followed by descending colon petechia in 78 (21.5%) patients, rectal whitish lesions in 45 (12.4%) patients, and sigmoid and rectal ulcers in 37 (10.2%) patients. Biopsy samples were non-specific in 96 (26.4%) patients. The most common pathological finding was juvenile polyp in 84 (23.1%) patients followed by lymphoid nodular hyperplasia in 55 (15.2%) patients and solitary rectal ulcers in 25 (6.9%) patients.

**Conclusions** Lower GI bleeding is more common among 2–10 year-old children and is rarely encountered in neonates. Hematochezia was the most common form of presentation followed by bloody diarrhea and occult blood.

**682 THE ROLE OF LACTOBACILLUS RHAMNOSUS GG SUPPLEMENTATION ON THE ERADICATION OF PATHOGENIC INTESTINAL FLORA IN INFANTS**

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**Objectives and study** It is suggested that colonization of gastrointestinal tract by pathological microorganisms in infants may modulate local mucosal immune response and start inflammation. Disorders of the digestive system in infants may be manifested by diarrhea, blood in the stools or abdominal pain. Probiotics, which exert effect on the health and well-being of the host, may be in that situations, a potential therapeutic option. Therefore, we constructed the study to investigate the efficacy of *Lactobacillus rhamnosus* GG (LGG) supplementation for the eradication of pathogenic intestinal flora in infants.

**Methods** A randomized, double-blind, placebo controlled trial included 65 infants (31 girls and 34 boys) at age from 2-st to 20-th month. All children presented symptoms such as vomiting, diarrhea, dyspeptic stools or blood in the stools. The enteropathological bacterial flora were revealed in each cases. Infants were randomly allocated to receive *Lactobacillus* GG 3x10<sup>9</sup> CFU (active LGG group, n=36) or placebo (maltodextrin) (placebo group, n=29). After 14 and 28 days of oral supplementation control stool cultures were performed.

**Results** Compared to the placebo group, infants in LGG group had an increase in benefit of the pathological intestinal flora eradication after 14 days and 28 days of oral LGG supplementation (RR 1.31, NNT 12, RR 1.39 NNT 4) respectively.

**Conclusion** The use of LGG supplementation seems to be effective in the eradication of gastrointestinal colonization by pathological bacteria.

**683 IS ESOPHAGEAL GLYCOGENIC ACANTHOSIS ASSOCIATED WITH GASTROESOPHAGEAL REFLUX DISEASE IN CHILDREN?**

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**Background and Aim** Glycogenic acanthosis (GA) is a common benign endoscopic and histopathological finding which has not known the pathogenesis and aetiology. There is a study about the relationship between GA and gastroesophageal reflux disease (GERD) on adults in the literature.

Retrospective in nature the aim of our study was to find out whether GA is associated with GERD in children.

**Methods** A total of 213 children (101 females, average age 8.4±4.9 years, range 2 months–18 years), who underwent diagnostic esophagogastroduodenoscopy during a three years period were included in this study.

The histopathological findings of GA and reflux-related changes according to Knuff & Leape classification were examined by the same pathologist. SPSS for Windows Release 16.0 was used to analyse the statistical data. All tests of statistical significance were two-sided with a p-value < 0.05.

**Results** Of the 213 children, 67 (31.4%) had GERD. GA was found in 38 (17.8%) of the 213 children. The prevalence of GA in the patients with GERD (12 of 67, 17.9%) and that in without (26 of 146, 17.8%) were similar. Likewise, when the prevalence of GERD in GA-positive patients (12 of 38, 31.6%) was compared with that in GA-negative patients (55 of 175, 31.4%), no statistically significant difference was found. It was found out that the prevalence of non-erosive reflux disease was quite alike in GA-positive and GA-negative children.

**Conclusion** Presence of GA was not associated with GERD in children.

**684 GLYCOGENIC ACANTHOSIS OF THE ESOPHAGUS: IS IT ASSOCIATED WITH HELICOBACTER PYLORI INFECTION IN CHILDREN?**

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**Background and Aim** Glycogenic acanthosis (GA) is usually reported as a histologic finding. The pathogenesis and aetiology of GA has not been explained definitively yet.

There are many studies about the relationship between *Helicobacter pylori* (*H. pylori*) infection and gastric or extragastric manifestations of malignant or non-malignant diseases in the literature. However, only one study deals with the association between GA and *H. pylori* infection.

The aim of our study was to find out whether GA is associated with *H. pylori* infection in children.

**Methods** A total of 206 children (98 female, median age 9.0 years, range 2 months–18 years), who underwent diagnostic esophagogastroduodenoscopy during a three years period, were included. GA