Results of our faecal calprotectin study are encouraging for early and routine use of a faecal calprotectin assay in clinical practice in the Czech Republic. This test is non-invasive, cost effective, simple and objective and can be used repeatedly. **The faecal calprotectin enzyme-linked immunosorbent assay is a simple test with excellent potential use in children.** We established reference values for faecal calprotectin in healthy children aged between 1 month and 15 years in our geographical region in the Czech Republic. **A significant correlation between age and faecal calprotectin concentration was found. Significantly higher levels of calprotectin in faeces were found in infants compared to older children or adults.** So we have confirmed in our study that an accurate definition of normál faecal calprotectin ranges in subjects aged less than 12 months is advocated before it can be routinely used in infants. **Faecal calprotectin is a useful marker of intestinal inflammation in children with IBD in clinical practice.** We have confirmed that children with active IBD defined by standard accepted criteria have significantly higher calprotectin values in stool than healthy children. Our results demonstrated the relationship between exacerbations, response to medical treatment, during the statě of remission and faecal calprotectin concentrations. This study demonstrates the usefulness of faecal calprotectin for non-invasive detection of intestinal inflammation in children with GIT symptoms suggestive of IBD. We have found that faecal levels of calprotectin significantly correlate with disease activity both in UC and in CD, with a more pronounced association found in UC. This leads us to suggest that the inflammatory processes UC and CD are different .The subset of patients with elevated faecal calprotectin concentrations with subclinical intestinal inflammation deserves warrants and further study. As calprotectin is a representative of intestinal inflammation in the bowel in IBD patients, it raises the question whether endoscopic examination could potentially be avoided. **Our clinical experience points to an expanded role in the diagnosis and management of IBD. Although not necessarily dictating IBD initiation, the TNF-> 308 A polymorphism may play a role in modifying the CD phenotype.** The polymorphism may influence disease activity as well as more intense inflammatory activity in both forms of IBD and may modify the progression of chronic digestive tract inflammation. **Our study proved for the first time that children with RAP and upper gastrointestinal inflammation (gastritis) had significantly elevated calprotectin levels compared to healthy children.** We observed no significant differences of faecal calprotectin values between subgroups of RAP children with chronic gastritis *H. pylori* positive and negative. *H. pylori* positive and negative subgroup of RAP children did not differ significantly from each other and healthy children; however the RAP group as whole did have significantly higher calprotectin level than controis. This has important implications for clinical practice concerning urging the clinicians into search for underlying conditions in children with RAP. It is therefore possible, theoretically at least, that faecal calprotectin changes could be involved in some aspects of the RAP and symptomatology of patients with RAP. **Our study for the first time demonstrated significantly elevated calprotectin levels in young children with acute gastroenteritis, where children with bacterial infections had higher level compared with children with acute diarrhoea I disease caused by viral infection.** We did not observe significantly different levels of faecal calprotectin in viral infected group compared with healthy children. This adds new information on the pathophysiological mechanisms of acute gastroenteritis in a paediatric population. **The measurement of faecal calprotectin may provide new tools for the quick assessment and therapeutic stratégy in children with acute gastroenteritis. Calprotectin is emerging as useful neutrophil marker in a variety of GIT conditions, calprotectin is a sensitive, but not disease specific marker to easily detect inflammation throughout the whole GIT tract.** It may help in identifying an organic disease characterised by intestinal inflammation and in the differential diagnosis of RAP. The faecal calprotectin test is a promising,

noninvasive test for differentiating between RAP and IBD in school aged children. **We calculated an optimised calprotectin cut-off value of 145pg/g (revealed by the receiver operating analysis) to distinguish patients with IBD from healthy subjects.** Raised faecal calprotectin should prompt further assessment in children with chronic GIT symptoms, since an organic disorder is likely. **I. Calprotectin as a marker of GIT inflammation, and as a tool for diagnosing organic disease or excluding functional disorders, is useful only when considered on the background of patient's age and the clinical presentation.** In young infants high faecal calprotectin levels are normál.