Clinical research in pediatrics gastroenterology and nutrition – From child's gastritis to his obesity and the elucidation of unknown in pediatrics

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The profession of physician represent probably one of the most challenging ones due to both the need of medical knowledge and the need to assure continously the patient's needs and to provide a patient-centered care indepently of his expectation and his personality traits.

The study of gastritis induced by *Helicobacter pylori* (*H. pylori)* infection in children did not end once I finished my PhD since I continued to assess this infection based on its epidemiology, clinical symptoms and the role of innate immunity. Thus, we proved the wide variation in the prevalence of this infection related to the geographical area. Moreover, the role of gastric microbiota is undoubtable in the acquisition of *H. pylori* infection and the injuries it causes at the level of the gastric mucosa. Extraintestinal manifestations related to *H. pylori* must increase permanently our awareness regarding the associated long-term risk. *H. pylori* has the ability to trigger a sublinic systemic inflammatory response even during childhood, which seems to be involved also in the development of extraintestinal manifestations related to this infection. As we proved in our research described in this thesis, innate immunity via the polymorphisms of toll-like receptors owns a dichotomic role since it might promote or limit this infection. The proper and early diagnosis of *H. pylori* infection is essential for an effective eradication, and probiotics associated with standard eradication regimend might increase the eradication rate.

Pediatric obesity is a global pandemics, and its systemic omplications have a major impact on patient's and family life quality, but also on patient's life length since they might associate a life-threatening long-term risk. Systemic inflammation triggered by the adipose tissue no longer represent an enigma in pediatric ages, fact proven by the increase of proinflammatory cytokines in children with obesity. Liver impairment due to obesity remains one of the most common complications which results hepatocytes adipose transformation eventually leading to non-alcoholic fatty liver disease (NAFLD), in fact the most frequent chronic hepatopathy in pediatric patients. The elucidation of the underlying mechanisms of this pathology carries a great importance in the elaboration of prophylactic and therapeutic effective strategies. The diagnosis of NAFLD and hepatic fibrosis imposes multiple chalenges in children, but elastography promises to be a non-invasive, low cost, and easy to perform method with an increased utility in diagnosing liver imparment in children with obesity.

Another area of research that gained my attention since I finished my PhD refers to medical communication and the role of students' personality in medical profession and the relationship doctor-patient. Moreover, there are several medical specialties or medical situation in which doctor-patient relationship extends and the doctor need to interact with the patient's family/caregivers to whom he must offer the required information making sure that the information was fully and properly understood for the best decisions in practice. Thus, the communication with the patient and his family owns a major role in eliminating the potential barriers that can occur in successfully fulfilling the medical profession and in increasing the efficacy of healthcare process provided to each patient. Moreover, the personality of the future doctors is extremely important in achieving a harmonious doctor-patient or doctor-patient-family relationship. The assessment of student's personality is vital for properly choosing the medical specialty and for the patient's outcome, fact that we proved in the research we performed on this topic.

COVID-19 represented a real challenge for the medical profession and forced us to face dificulties related to the diagnosis and management of a pathology on whose mechanism we had to learn much and we are still far to fully understand it. Altough SARS-CoV-2 causes mild forms in children in most of the cases, its long-term complications are not neglectable. The multisystem inflammatory syndrome trigerred by this virus might lead to several systemic complications, among which cardiac impairment is probably the most important one due to both its frequency and severity. The interrelation between obesity and SARS-CoV-2 infection augments the immune response and increases the risk of developing this post-COVID multisystem inflammatory syndrome. The clinical picture of SARS-CoV-2 is more diverse in pediatric population as compared to adults, and the gastrointestinal manifestations have a higher frequency in this age group. Nevertheless, we must be aware that not everything is COVID and we must not forget other rare pathologies that might mimic this infection even in the COVID era. Testing the patients and diagnosing early and prompt this infection represents the cornerstone in limiting its transmission and in preventing its further complications.

The multitude of rare cases such as sarcoidosis, the atypical forms of Kawasaki disease, the severe forms of mushroom intoxication, the renal polycistic disease in newborn or the stroke in infant, which we diagnosed and treated in the nine years of my life as pediatrician, although I might say that it is not a long period, made me to love even more pediatrics and to anxiously wait each day of profession in order to elucidate the misteries of this puzzle called pediatrics.