



Long-term effect of *Helicobacter pylori* eradication therapy on gastrointestinal microbiome in a Latvian population

Darta Pupola

University of Latvia, Latvia

Abstract:

Objective: *H. pylori* infections are present in 80% of Latvian population thus increasing the susceptibility of numerous of the gastric tract diseases, including gastric adenocarcinoma. The 1st line *H. pylori* eradication therapy includes treatment with clarithromycin in combination with amoxicillin or metronidazole and a proton pump inhibitor. However, potential adverse events caused by such therapies to microbiome are insufficiently studied. Therefore, the aim of this study was to evaluate the long-term effects of *H. pylori* eradication on gastrointestinal (GIT) microbiome.

Design: The assessment of *H. pylori* eradication therapy on GIT microbiome was performed on 120 faecal samples. Samples were collected in OC-Sensor (Eiken Chemical Co., Tokyo, Japan) sample collection containers and stored at -86°C. Total DNA was extracted using FastDNA Spin Kit for Soil (MP Biomedicals, USA) and was followed by 16S rRNA V3 gene sequencing employing Ion Torrent Personal Genome Machine (Life Technologies, USA).

Results: Overall microbiome community composition remained stable between pre- and post-eradication microbiome samples, however, shifts between predominant enterotypes as well as positive correlation for certain bacteria between the two categories was found in relation to age, individual, experience respiratory and/or allergic diseases and if the eradication therapy was used as prescribed. **Conclusion:** Modest global differences at the community level exist between individuals before and after the eradication therapy when considering the long-term impact; however, the microbiome structure is more related with the patient-specific parameters, such as age or experienced diseases, rather than by the eradication therapy itself.



Biography:

Darta Pupola is a young researcher who has finished University of Latvia as a biologist. She has experience in genetics, cell biology, microbiome analyses in a field of oncology and GIT studies.

Publication of speakers:

- Gudra, Dita & Pļpola, Dlrta & Skenders, Girts & Leja, Marcis & Radovica-Spalvina, Ilze & Gorskis, Henrihs & Vangravs, Reinis & Fridmanis, Davids. (2020). Lack of significant differences between gastrointestinal tract microbial population structure of *Helicobacter pylori* infected subjects before and 2 years after a single eradication event. *Helicobacter*. 25. 10.1111/hel.12748.
- Rudzite, Dace & Leja, Katrīna & Kikuste, Ilze & Rudule, Aiga & Vangravs, Reinis & Santare, Daiga & Pļpola, Dlrta & Skenders, Girts & Leja, Marcis. (2017). Antimicrobial Susceptibility in *Helicobacter pylori* Isolated From Gastric Biopsies in Adult Population in Latvia. 10.13140/RG.2.2.13679.12962.
- Zandberga, Ellna & Zayakin, Pawel & Abols, A. & Pļpola, Dlrta & Trapencieris, Peteris & Linl, Aija. (2017). Depletion of carbonic anhydrase IX abrogates hypoxia-induced overexpression of stanniocalcin-1 in triple negative breast cancer cells. *Cancer Biology & Therapy*. 18. 00-00. 10.1080/15384047.2017.1345390.
- Linl, Aija & Zandberga, Ellna & Abols, A. & Bajo-Santos, Cristina & Toleikiene, R. & Zayakin, Pawel & Pļpola, Dlrta & Švirksts, Krlis & Grube, Mara & Riekstina, Una. (2016). Hypoxic conditions regulate the molecular content, release and uptake rates of extracellular vesicles produced by colorectal cancer cells. *European Journal of Cancer*. 61. S96. 10.1016/S0959-8049(16)61338-2.

Webinar on Medical and Pharmaceutical Sciences

Citation: Darta Pupola; Long-term effect of *Helicobacter pylori* eradication therapy on gastrointestinal microbiome in a Latvian population; Euro Medical Pharma 2020; October 05, 202; UK Time zone