



Type 1 (T1D), type 2 (T2D), and latent autoimmune diabetes in adults (LADA) as a single fecal-oral transmitted polymicrobial infection in genetically susceptible individuals

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Abstract:

Statement of the Problem: Nowadays, it is admitted that the transmission of a donor disease through transplantation/transfer of an unhealthy gut microbiota (dysbiosis) fulfills Koch's postulates on polymicrobial infections. This is the case of disorders such as inflammatory bowel disease, colorectal cancer, obesity, kwashiorkor and environmental enteropathy. This paper provides the literature evidence supporting the idea that T1D, T2D and LADA are a single transmissible polymicrobial infection that can spread both intra- and intergenerationally. Methodology & Theoretical Orientation: Network research focusing on diabetogenic gut microbiota as a crucial environmental factor for the development of all clinical forms of diabetes mellitus. Conclusion & Significance: The transfer of a diabetogenic gut microbiota to genetically susceptible individuals carrying an immature intestinal immune system causes T1D and LADA. In contrast, those with intestinal immune maturation will develop T2D. Ultimately, long-term T2D can compromise gut immunity and progress to T1D.

Biography:

Ivanildo Coutinho, MD is Professor Emeritus of Gastroenterology at Federal University of Rio Grande do Norte, Brazil. My main area of expertise focuses on pathophysiology of gut microbiota-related gastrointestinal and systemic diseases

Recent Publications:

1. Vonaesch P, Anderson M, Sansonetti PJ (2018). Pathogens, microbiome and the host: emergence of the ecological Koch's postulates. *FEMS Microbiol Rev* 42:273-92.
2. Schaubeck M, Clavel T, Calasan J, Lagkouvardos I, Bastiaan S, Haange et al (2015). Dysbiotic gut microbiota



- causes transmissible Crohn's disease-like ileitis independent of failure in antimicrobial defence. *Gut* 65:1-13.
3. Wong SH, Zhao L, Zhang X, Nakatsu G, Han J, Xu W, et al (2017). Gavage of fecal samples from patients with colorectal cancer promotes intestinal carcinogenesis in germ-free and conventional mice. *Gastroenterology* 153:1621-1633. e6.
 4. Turnbaugh PJ, Ley RE, Mahowald MA, Magrini V, Mardis ER, Gordon JI (2006). An obesity-associated gut microbiome with increased capacity for energy harvest. *Nature* 444:1027-31.
 5. Smith MI, Yatsunencko T, Manary MJ, Trehan I, Mkakosya R, Cheng J, et al (2013). Gut microbiomes of Malawian twin pairs discordant for kwashiorkor. *Science* 339:548-54.

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