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Diabetes mellitus and obesity as a result of a disrupted homeostatic microbiome new data on aetiopathogenesis of diabetes mellitus

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The etiopathology of diabetes mellitus is not fully understood. Recent studies have confirmed that microorganisms can influence insulin secretion directly when present in the pancreas and indirectly by increasing their number in the gastrointestinal tract. In a healthy body, microorganisms are part of the homeostatic microbiome and play a key role in maintaining health, digestion and metabolism. Formation of the homeostatic microbiome (Ring of Life) takes place in several stages: Pregnancy and childbirth, breastfeeding, contact with family and wider environment, nutrition and sexual contacts. Many internal and environmental factors can lead to disorders of homeostatic microbiome, which leads to certain diseases, including disorder of glucose homeostasis. The present research tests the hypothesis that disruption of the homeostatic microbiome plays an important role in etiopathogenesis of diabetes mellitus and obesity. Our research result demonstrates that microorganism has influence on pancreatic islets insulin secretion. Namely, they perform their impact directly (when present in pancreas) and indirectly, by secreting their metabolites which have influence on pancreas islets trough the blood vessels, because of increase in their number in human body, disorder of HM emerged. Bacterial agents (*Enterobacter* spp., *Pseudomonas aeruginosa*, *Staphylococcus* spp.) reduce insulin secretion leading to postprandial hyperglycemia. Fungal agents (*Candida albicans*) increase insulin secretion causing postprandial hypoglycemia and insulin resistance. It is known that increased insulin secretion is frequent in obese persons. Both cases lead to glucose intolerance and insulin resistance and in some cases the development of the type-2 diabetes mellitus and obesity.

Biography:

Dragan Nikolic M has his expertise in research of the diabetes, insulin secretion, transplantation, pancreatic islets culture and influence of microorganisms on the onset of the diabetes, pancreatic infection and on pancreatic islets insulin secretion. He is the author of many scientific papers dealing with diabetes and he is an Editorial Board Member and Reviewer for many international scientific journals.

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