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Characters of metabolic syndrome in high-fat-diet-induced obesity animal models — From mouse to canine

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The animal models with the similar clinical pathophysiological characteristics provided a wonderful foundation for the investigation of diseases. The metabolic syndrome (MS) is characterized with obesity, insulin resistance, and gluco lipid metabolic disorders. To establish a standardized experimental evaluation system, the euglycemic-hyperinsulinemic clamp test, insulin tolerance test (ITT), and level of whole body insulin sensitivity index (ISWB) was used for the insulin sensitivity; the hepatic histological analysis, triglyceride content, microcirculation, and serum alanine amino transferase levels were for the fatty liver; the glucose tolerance test (GTT) and serum lipid profiles were for the gluco lipid metabolic disorders; and the hyperglycemic clamp test was for the islet function, respectively. The DIO mice or DIO canine were induced by the modified high-fat-diet in C57BL mice or Beagle canine (with fructose drink), respectively. Then, the metabonomics of serum, liver and urine was analyzed. As per the results, the characters of gradually aggravated obesity, insulin resistance, impaired glucose tolerance, and liver lipid accumulation were similar in both DIO mice and DIO canines; but for the serum lipid profiles, DIO canine, DIO mice and KKay mice (a classical MS model), each has their own characteristics. The characters of high-fat-diet-induced obesity animal models, DIO mice and DIO canine, are analogous with the progress of the MS patients.

Biography

Fei Ye has completed her graduation from School of Basic Medicine, Peking University Health Science Center. She is engaged in her scientific research focusing on the pharmacology of anti-metabolic syndromes. She has published more than 40 papers, and has served as an Editorial Board Member of *Journal of International Pharmaceutical Research*, and as a committee in some professional associations. She presided at many gatherings supported by National Major Project on New Drug Innovation, Natural Science Funds of China, and State Administration of Traditional Chinese Medicine, respectively. She has 6 patent authorizations for the invention of new drugs.

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