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تأثير اضافة زيت الزيتون وزيت السمك على ابيض الدهون في الجرذان

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Abstract : Dietary fats with different degrees of fatty acid saturation may have a critical effect on serum levels of lipids and lipoproteins. Among dietary fatty acids, n-3 PUFA and MUFA have recently received considerable interest because of their various beneficial health effects. The aim of the present study was to assess the effect of diets rich in monounsaturated fatty acids (olive oil) and polyunsaturated fatty acids (fish oil) with or without carbohydrate (sucrose) on lipid and glucose metabolism. Also to determine whether the effect of these diets were reflected on a number of performance parameters. 96 male Wistar rats were divided into eight groups. The diets used in our study: included control and control-sucrose diets, which they supplemented with 20% (v/w) of either fish oil, olive oil or butter. The lowest significant levels of serum triglycerides, total cholesterol, LDL-cholesterol and glucose were obtained for fish oil diet, while the highest significant levels were that obtained with butter diet. No significant difference was observed between olive oil and control diets in serum levels of triglyceride, total-cholesterol and glucose. Compared with butter diet, both fish oil and olive oil diets had lowering effects on serum levels of triglyceride, total-cholesterol, LDL-cholesterol and glucose. For serum total lipid levels, fish oil and olive oil groups had the lowest values compared to the other groups. Serum triglyceride levels of all diets high in sucrose were higher than all diets without sucrose, while no significant difference was obtained between them in serum levels of total cholesterol. A high-sucrose fish oil diet resulted in the highest level of serum LDL-cholesterol and the lowest level of HDL-cholesterol. Furthermore, olive oil and butter supplemented with sucrose had similar effect on serum levels of LDL-cholesterol and HDL-cholesterol. It could be concluded therefore, that consumption of fish oil has a beneficial effect as a hypotriglyceridemic and a hypocholesterolemic agent. On the other hand, our findings, led to suggest that, the consumption of fish oil rather than olive oil, as compared with butter, seems to result in a favourable lipid level, with significant advantages of the fish oil-enriched to the olive oil-enriched diet. It seems from our results that consumption of high sucrose diet induces hypertriglyceridemia. While the absence of a significant response in serum total-cholesterol levels between the four high sucrose diets, lead to conclude that the presence of sucrose in the diet regardless of the presence or absence of fats tend to have the same effect.