THE *Tamarindus indica* FLOUR IMPROVED FASTING GLUCOSE AND GLUCOSE TOLERANCE, DESPITE NO EFFECTS IN THE ADIPOSITY OF MICE WITH OBESITY.

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Tamarind seeds (*Tamarindus indica*) have gained scientific interest because they are rich in nutrients (proteins and fibers) and several bioactive compounds (phenolics) that may be beneficial in cellular and molecular processes related to the pathogenesis of chronic diseases. In this context, the anti-inflammatory, antioxidant and antimicrobial effects of these seeds (or their products) have been demonstrated in several experimental models. However, there is little evidence demonstrating the effects of these seeds on adiposity and obesity-induced dysfunctions. Therefore, this study aimed to evaluate the anti-obesity effects of *T. indica* seeds in a diet-induced obesity experimental model (mice). Firstly, a floury material (tamarind seed flour – FT) was produced to be used in the biological assay. In the experiment, male C57BL/6 mice were randomly assigned into four groups: C - fed a control diet; Ob - fed a high-fat diet; CFT - fed C diet + FT (5% w/w) and ObFT, fed a high-fat diet + FT (5% w/w) for 5 weeks. Food and caloric intake, energy efficiency ratio, body weight, adiposity markers (waist/naso-anal length ratio, visceral adiposity index), fasting glucose and glucose tolerance (intraperitoneal glucose tolerance test) were evaluated. At the end of the experiment, the CFT group ate more (food and calories) than C, Ob and ObFT ($p<0.05$). Ob and ObFT groups showed equally higher body weight, energy efficiency and visceral adiposity than C and CFT ($p<0.05$). There was no difference in waist/naso-anal length ratio among groups. The high-fat diet increased fasting glucose and reduced glucose tolerance ($p<0.05$). When the FT was added to the high-fat diet, fasting glucose was reduced, and glucose tolerance was improved ($p<0.05$), although they did not reach C or CFT values. In the control diet, FT also reduced fasting glucose and glucose tolerance, and both were lower than in Ob or ObFT groups ($p<0.05$). The *T. indica* flour improved fasting glucose and glucose tolerance, despite no effects on the body weight and adiposity of mice with obesity. Further studies must be conducted to elucidate potential mechanisms evolved. The T. indica flour fibers and/or phenolic may be responsible, at least, in part for those effects.

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