

# 9<sup>th</sup> Diabetologists Conference

June 06-08, 2016 Dallas, Texas, USA

## Anti-hyperglycemic activity of *Aegle marmelos* is partly mediated by alpha amylase inhibition and retardation of glucose absorption

Gazi Md Mustakim, Prawej Ansari, S Azam, S Jalil, S A Hoque, Z Chowdhury, F F Ruchita and J M A Hannan  
North South University, Bangladesh

The study was designed to observe the anti-hyperglycemic effect of *Aegle marmelos* as reported earlier in diabetic model rats. This study was carried out to explore the possible effects of *A. marmelos* extract on carbohydrate absorption and glucose utilization. We measured fasting blood glucose and performed glucose tolerance test to evaluate the primary anti-hyperglycemic effect, in type 2 diabetic rats. Further, we studied the plasma insulin concentration and serum glucose level. Effect of extracts on carbohydrate break down, sucrose malabsorption and gut perfusion study of the GI tract and  $\alpha$ -amylase inhibition were assessed. Gastrointestinal motility was seen by BaSO<sub>4</sub> milk traverse test. Treatment of extracts suppressed blood glucose elevation after oral sucrose (2.5 g/kg) administration and (1.25 g/kg) significantly improved oral glucose tolerance in type 2 diabetic rats. *A. marmelos* extracts showed significant changes in plasma insulin secretion. The extracts significantly reduced glucose absorption in the *in situ* perfused rat intestinal model at two different doses. The extract inhibited the action of  $\alpha$ -amylase, and this study was confirmed again by the sucrose malabsorption test, where sucrose digestion was inhibited throughout the length of the GI Tract. During the chronic study, body mass of rats returned to normal and their polydipsic and polyphagic conditions were improved too. This combination of *in vitro*, *in vivo* and *in situ* intestinal perfusion technique confirmed the anti-hyperglycemic activity of *A. marmelos* and its tissue level mechanism. Additional study is required to fully demonstrate the effects of the active compounds to the precise mechanism of glucose-fiber binding capacity and glucose transporters.

### Biography

Gazi Md Mustakim is pursuing Bachelor of Pharmacy at North South University, Dhaka, Bangladesh. He is doing his research work under the supervision of Prof. Dr. J M A Hannan. He has submitted number of research works for publication in reputed journal which is under process. He is a great team leader and a friendly person to work with. He has attended many International Conferences such as IUPAC conferences. Not only he has skills in doing lab work, he also has great skills on SPSS statistical software, Microsoft office.

[gazisunny@yahoo.com](mailto:gazisunny@yahoo.com)

### Notes: