

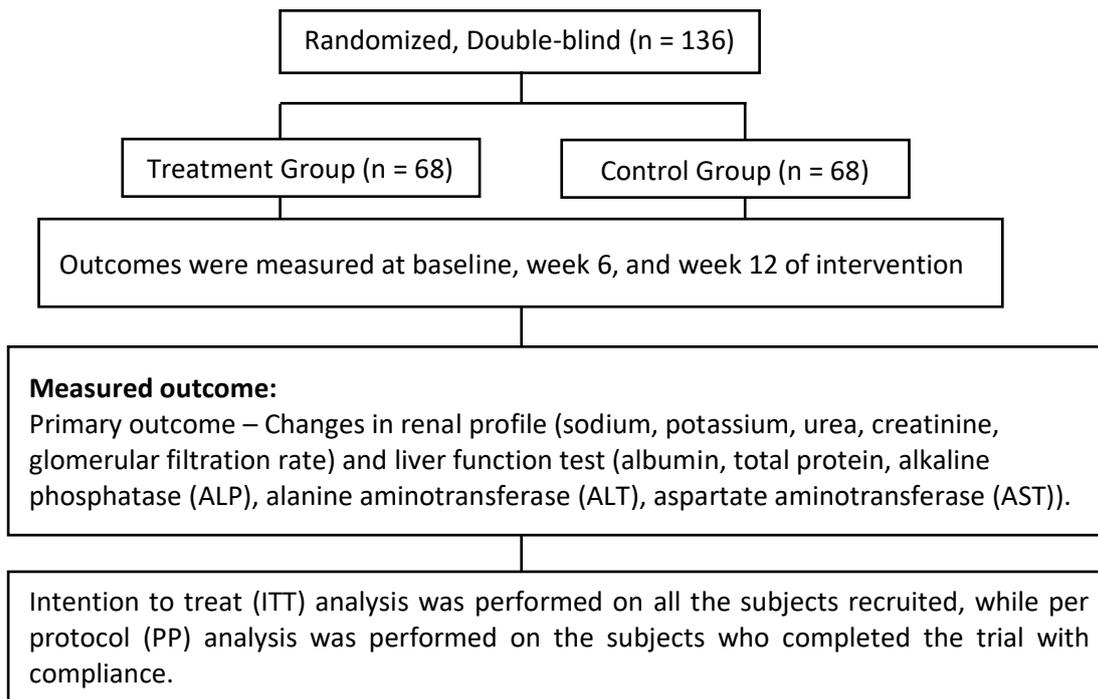
Effect of microbial cell preparation on renal profile and liver function among type 2 diabetics: A randomized controlled trial

Objectives

To investigate the effect of HEXBIO® on renal profile and liver function among type 2 diabetic individuals.

Methods

This was a randomized, double-blind, placebo-controlled trial. A total of 136 moderately well-controlled type 2 diabetes aged 30-70 years old were randomized to receive either HEXBIO® or placebo for a period of 12 weeks.



Outcomes

The study showed Treatment group have a significant reduction in urea levels after 6 weeks from baseline and maintained until week 12. Overweight and obese (OW/OB) patients under treatment showed significant reduction of urea level during 12 weeks of treatment. Over the period of 12 weeks, Treatment group did not have any significant changes to Alanine Aminotransferase (ALT) ($p = 0.199$). This indicates consumption of HEXBIO® during the course of the study did not induce liver toxicity.

ALT is one of the main indicator of the drug-induced liver toxicity (Kaplowit et al., 2004).

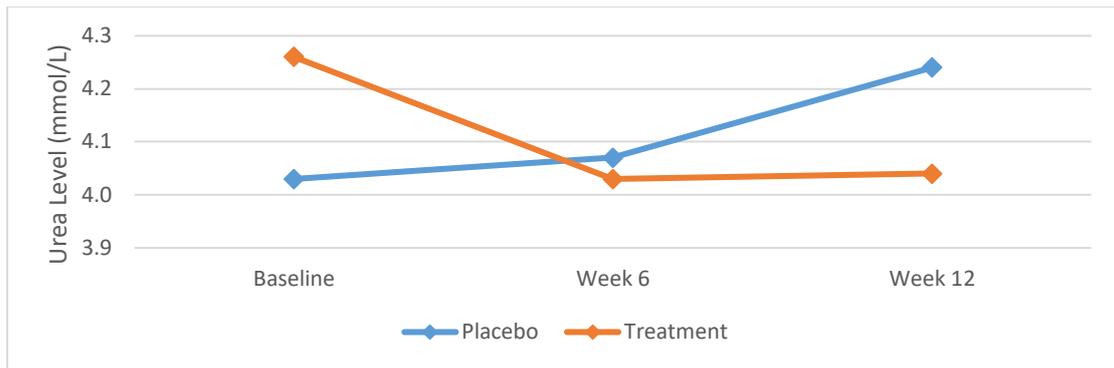


Figure 1. Changes in Urea levels (mmol/L) between Placebo and Treatment group over the course of the study. Significant between groups in ITT analysis ($p < 0.05$).

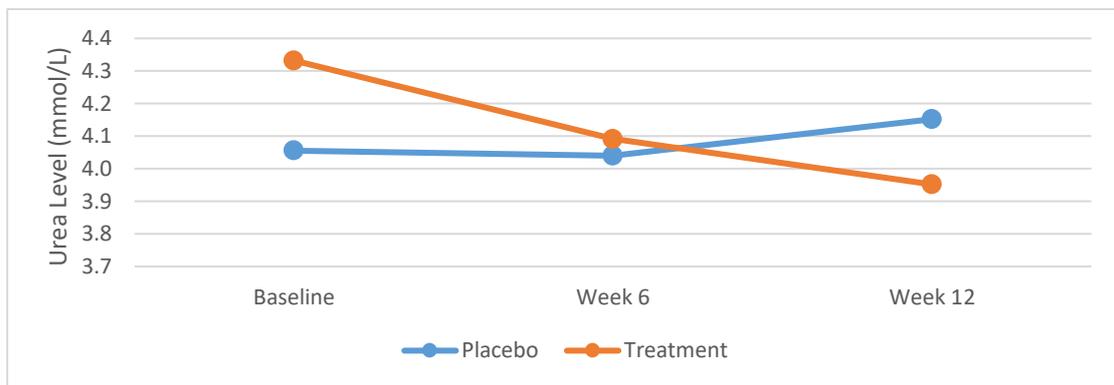


Figure 2. Changes in Urea levels (mmol/L) between Placebo and Treatment group in OW/OB subjects ($n = 73$). Significant between groups ($p < 0.05$).

Conclusion

In this study, HEXBIO® was beneficial in improving urea levels in type 2 diabetes patients, particularly among overweight and obese subjects. HEXBIO® did not induce any liver toxicity among the type 2 diabetes patients.

Reference

Kaplowitz, N. (2004). Drug-induced liver injury. *Clinical Infectious Diseases*, 38 Supple 2: S44-8.

Firouzi, S., Mohd Yusof, B. N., Majid, H. A., Ismail, A., & Kamaruddin, N. A. (2015). Effect of microbial cell preparation on renal profile and liver function among type 2 diabetics: a randomized controlled trial. *BMC Complementary and Alternative Medicine*, 15(1), 433. <https://doi.org/10.1186/s12906-015-0952-5>