

## Evaluation of the efficacy of Ayurveda formulations in the management of non-alcoholic fatty liver disease: A randomized clinical trial

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Non-alcoholic fatty liver disease (NAFLD) is a common hepatic disorder, often linked to obesity and metabolic syndrome, ranging from simple steatosis to nonalcoholic steatohepatitis (NASH), which can progress to cirrhosis and hepatocellular carcinoma. The study was focused on evaluating the efficacy of two Ayurveda formulations, *Phalatrikadi Kvatha* combined with either *Triphala Guggulu* or *Arogyavardhana Vati* for NAFLD management. Seventy-two patients were recruited to the study. They were randomly assigned to Group A (*Phalatrikadi Kvatha* with *Triphala Guggulu*) or Group B (*Phalatrikadi Kvatha* with *Arogyavardhana Vati*). Evaluations included clinical histories, anthropometric measurements, hematological, biochemical and ultrasound imaging. The cohort was predominantly aged 61-70 years (53.1%) and female, with the majority diagnosed with Grade II fatty liver (65.6%). Abdominal discomfort was the most frequent symptom (46.9%). Post-treatment, both groups showed significant symptom relief. Group A had a mean BMI reduction of  $0.69 \pm 0.39$ , while Group B showed a reduction of  $0.53 \pm 0.36$  ( $p > 0.05$ ). Liver function tests revealed a decrease in AST/SGOT levels for Group A ( $9.54 \pm 3.46$ ) and Group B ( $9.61 \pm 4.08$ ), though the difference was not significant ( $p > 0.05$ ). However, ALT/SGPT levels showed a substantial reduction in Group B ( $37.60 \pm 14.83$ ) compared to Group A ( $11.36 \pm 7.71$ ) ( $p < 0.05$ ). Additional improvements were seen in GGT, ALP, serum albumin, and bilirubin levels, though these changes were not statistically significant ( $p > 0.05$ ). Serum creatinine levels showed mild reduction, with ultrasound imaging showing no significant change in liver echogenicity and parenchymal thickness. Both Ayurveda treatments were effective, with Group B demonstrating superior improvements in liver function, especially in ALT/SGPT levels, supporting the efficacy of these interventions for managing NAFLD.

**Keywords:** NAFLD, Ayurveda, *Phalatrikadi Kvatha*, *Triphala Guggulu*, *Arogyavardhana Vati*