

## **Two week protein-enriched low-calorie diet (HEPAFAST) shows rapid improvement of fatty liver as assessed by controlled attenuation parameter**

Anita Arslanow<sup>1</sup>, Melanie Teutsch<sup>2</sup>, Hardy Walle<sup>2</sup>, Frank Lammert<sup>1</sup> and Caroline S. Stokes<sup>1</sup>

<sup>1</sup>Department of Medicine II, Saarland University Medical Center, Homburg, Germany

<sup>2</sup>Bodymed AG, Kirkel, Germany

**Background:** Fatty liver (FL) is one of the most prevalent liver disorders, which increases the risk of fibrosis and cirrhosis. FL occurs in more than half of diabetic patients. The aim herein was to assess for therapeutic effects of a dietary intervention on FL, as quantified using the controlled attenuation parameter (CAP).

**Methods:** Sixty-six patients with FL received a 14-day low-calorie liver-specific diet containing 800 kcal/day (HEPAFAST: 41% protein, 29% carbohydrates, 24% fat, 6% fiber) and 200 kcal/day through vegetable intake. The following parameters were assessed pre- and postintervention: liver fat contents using the CAP algorithm during transient elastography; body composition with bioimpedance analysis; serum liver function tests and lipids using standard clinical-chemical assays.

**Results:** All 66 patients, median age 56 years (25-78), 52% women, median BMI 31.7 kg/m<sup>2</sup> (22.4-46.3) successfully completed the study. A significant reduction in liver fat (14.3%;  $P < 0.001$ ) was observed after 2 weeks: median CAP score 264 dB/m (100-353) vs. 296 dB/m (177-400). Concurrently, BMI decreased by 5% and body and visceral fat contents reduced by 7%. Serum lipids and GGT activities also decreased (all  $P < 0.001$ ). When comparing diabetics with non-diabetics (24% vs. 76%), equal improvements of liver fat, body composition, serum liver function tests and lipid profiles were observed (all  $P > 0.05$ ).

**Conclusions:** This non-invasive elastography-based study demonstrates for the first time improvements in liver fat, as quantified by CAP, after a short-term protein-enriched low-calorie diet. The dietary intervention reduced body weight and improved body as well as liver composition in both diabetics and non-diabetics alike.