Institute for Clinical and Experimental Medicine

Monitoring of hepatic fat metabolism using magnetic resonance methods

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Study statistical analysis plan

September 14th, 2018

(translation of original Study protocol in Czech dated April 2016)

The data collected will be analyzed using the software package GraphPad Prism 5 (GraphPad Software, La Jolla, CA).

To address the question whether dietary intervention affect hepatic fat content (HFC), the changes in HFC will be analyzed without transformation or expressed as percentage of baseline values (time 0). The ANOVA for repeated measures and Dunnett´s multiple comparison post-test (or Friedman´s test and Dunn´s multiple comparison post-test) will be used for this analysis.

To address the question about the role of selected nutrients and hormones in accumulation of liver fat, the changes in biochemical parameters (triglycerides, glucose, non-esterified fatty acids, insulin, and glucagon) over time will be evaluated using ANOVA for repeated measures and Dunnett´s multiple comparison post-test (or Friedman´s test and Dunn´s multiple comparison post-test).

The areas under curve (AUCs) and the areas under incremental curve (AUICs) for these biochemical parameters in the plasma will be calculated using the trapezoid rule. AUC and AUIC values will be then compared using repeated measures ANOVA and Tukey´s multiple comparison post-test. One-sample t-test will be also used to determine whether the AUIC differ from zero.