Introduction:
To measure energy requirements of patients with acute severe pancreatitis using indirect calorimetry and investigate if the amount of received calories and protein are related to better outcomes.

Methods:
Prospective observational study with acute severe pancreatitis patients was conducted after the approval of Regional Committee of Bioethics. Demographic, outcome data and clinical nutrition records were collected. Energy needs of patients were measured using indirect calorimetry (IC).

Results:
22 patients were enrolled in the study. 12 patients survived. Average energy expenditure (EE) for all patients was 26 ± 4 kcal/kg (mean ± SD). There was no difference in the average EE between the patients who survived and those who died: 27 ± 1 and 25 ± 1 kcal/kg (mean ± SD) respectively (p > 0.05). However, there was a negative correlation between EE and SAPS 3 score in the non-survivors group – correlation coefficient -0.679, p < 0.05. The energy deficit (computed by subtracting caloric intake from EE measurement) was similar among survivors and non-survivors, 5.5 ± 1 vs 6.5 ± 2 kcal/kg, respectively (mean ± SD) (p > 0.05). The patients who survived had received 21 ± 1 kcal/kg while those who died – 18 ± 1 kcal/kg (mean ± SD) (p > 0.05). The provision of protein was also similar for both groups: 0.9 ± 0.1 g/kg for survivors and 1 ± 0.04 g/kg for non-survivors (mean ± SD) (p > 0.05).

There was no statistically significant correlation between provision of calories and protein and outcomes such as length of hospital and ICU stay or duration of mechanical ventilation.

Conclusion:
Average energy expenditure in critically ill patients with acute severe pancreatitis roughly equals to ASPEN estimation of 25 kcal/kg and does not differ among survivors and non-survivors. Outcomes such as survival, length of hospital and ICU stay and duration of mechanical ventilation were unaffected by caloric nor protein provision in this sample.