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Open abdomen and obesity: new evidences from IROA, the international register of open abdomen

Background: open abdomen is the cornerstone of damage control strategies in acute care and trauma surgery; several efforts have been made to identify risk factors for complications. The role of body composition and BMI has not been well investigated.

Aim: the aim of the study was to assess the role of body composition in determining outcomes after open abdomen.

Methods: this is an analysis of patients recorded into the International register of Open Abdomen (IROA); patients were classified in two groups according to BMI using a cut-off of 30 Kg/m2. The primary outcome was in-hospital mortality; secondary outcomes were primary fascia closure rate, length of treatment, complications and length of ICU stay.

Results: 591 patients were enrolled from 57 centres; the mean age was 59,6±18,1 years and 58% were male; mean BMI was 27,0±5,7 kg/m2 and obese patients were 127(21,5%). Overall mortality rate was 33,2%, cumulative complications rate during treatment was 55,7% and after definitive closure it was 54,5%; 50(8.5%) patients developed an enteroatmospheric fistula. The mean duration of open treatment was 6.9(±8.6) days and 123(20,8%) patients died during the open treatment. Primary fascia closure rate was 86,5%. There was no difference in mortality between the two groups; complications developed during the open treatment were higher in obese patients(63,8% vs. 53,4%, p=0.038) while post-closure complications rate was similar. Obese patients had a significantly longer duration of the open treatment (9,1±11,5 days vs. 6,3±7,5 days; p=0,002), lower primary fascial rate (75,5% vs. 89,5%; p<0,001). There was a linear correlation between the duration of open abdomen and the BMI (Pearson's linear correlation coefficient=0,201; p<0,001).

Discussion: Open abdomen in obese patients seems to be safe as in non obese patients with similar mortality; however in obese patients the length of open abdomen in significantly higher with higher complication rate, longer ICU length of stay and lower primary fascia closure rate.