

Intra-abdominal pressure monitoring in patients admitted to Intensive Care Unit after oncologic abdominal surgery

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BACKGROUND: The Intra-abdominal pressure (IAP) results from the relationship between intra-abdominal organs and abdominal wall, and can be indirectly measured by intravesical pressure (IVP). IAP can rise after abdominal surgery. Associated risk factors are obesity and a positive fluid balance. A sustained IAP elevation, over 12 mmHg, means a hypertensive intra-abdominal status. Abdominal Compartment Syndrome (ACS) is the clinical condition of organ dysfunction caused by intra-abdominal hypertension (IAH).

HYPOTHESIS: Oncologic Abdominal Surgeries (OAS) can allow favorable conditions to an IAP increase.

METHODS: Observational retrospective cohort study, performed at Barretos Cancer Hospital Intensive Care Unit (ICU), Barretos, Brazil. The data were collected in a three months period, through adult patients chart review. The object of the study were Intra-Abdominal Pressure (IAP) serial measurements in patients admitted to the ICU for postoperative care of OAS, in order to detect the occurrence of Intra-Abdominal Hypertension (IAH). The inclusion criteria were: 1) adult patients (18 years minimum), 2) ICU admission for OAS immediate postoperative care, or 3) recent OAS (up to two weeks before), with a medical indication for ICU admission. The measurements were obtained through IVP analysis (Kron technique- 2013 Abdominal Compartment Syndrome (ACS) World Society Consensus), and along with several other variables, were examined on three moments: 1) at ICU admission; 2) the greatest level of IAP observed during ICU stay; 3) the last level of IAP observed before ICU discharge or death. The statistical data included univariate and multivariate analysis with SPSS package v.21.

RESULTS: Thirty four patients were included. Their mean age was 63 years (± 10.8); 56% were male; 79.4% Caucasian and 38.2% obese. Their ICU stay was three to six days. There were thirty three scheduled surgeries (97%), and one emergency. Most patients were submitted to Upper Digestive tract surgery (15 patients—44.1% of the total), and the others as follows: Urology (11—32.4%), Lower Digestive Tract (5—14.7%), and Gynecology (3—8.8%). Seventeen surgeries were laparotomies (50% of the total); thirteen laparoscopic (38.2%) and one of these was robotics. The remaining others needed laparoscopic and laparotomy access (11.8 %). In one case, a peritoneostomy was done. The IAH prevalence (moment 1) was 55.89% (19 of 34 patients); there was a positive correlation to the following variables: race, renal failure, Sequential Organ Failure Assessment Score (SOFA), lactate and oxygen arterial saturation (SatO₂). The IAH incidence (higher IAP elevation—moment 2) was 97%, and showed a positive correlation to race, diabetes mellitus and nutritional state (NS). At the last measurement (moment 3) there was IAH in 76.5% of the patients (26 of them), and the correlation was positive to race, Systemic Arterial Hypertension, SOFA score, NS, lactate and SatO₂. There was no correlation between cumulative fluid balance and IAH. The only positive correlation to IAH was NS. There was no case of ACS.