Relationship Between Acute Phase Markers and Post-operative Pain in Open Tension-free Inguinal Hernia Repair: An Observational Study

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Background: Many patients undergoing Open Tension-free Inguinal Hernia Repair are prone to developing acute and chronic post-operative pain.
The aim of the study is to show a possible correlation between pain and acute phase proteins in order to:

- predict the severity of pain;
- select most suitable pain relief therapy for the patient.

Materials and methods: The day after surgery, some serum markers are determined by a blood sample. The markers analyzed are:

- Leukocytes;
- C-reactive protein (CRP);
- D-dimer;
- Fibrinogen;
- Neutrophil-to-Lymphocyte Ratio (NLR).

Pain level is assessed using the NRS scale at different times:

- 1st post-operative day;
- 7th post-operative day;
- One month after surgery;
- Three months after surgery;
- Six months after surgery.

Other data collected for the study are: gender, age and BMI.

SAP: Statistical Analysis Plan was expressed as percentages, median, and range of values. Differences between continuous variables were analyzed with the Mann-Whitney U test, whereas differences between categorical variables were evaluated with the chi-square or the Fisher's exact test, when appropriate. Variables achieving statistical significance ($P<0.05$) at univariate analysis were entered in a backward multivariate logistic regression model, removing the variable if P more than 0.10. P less than 0.05 was considered statistically significant. Statistical analysis was carried out with the SPSS software packaging (SPSS Inc., Chicago, IL), version 13.

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