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Prediction model for the risk of future Repeat abdominal surgery : a nationwide cohort study (SCAR update).

Background:

As many as 40-66% of elective procedures in general surgery are reoperations. In 80 % of Re-operated patients adhesiolysis needs to be performed. Adhesiolysis results in prolonged operation times and increased risk of inadvertent injuries. Some of the risk of adhesiolysis can be mitigated by using prophylactic agents. Therefore it is relevant to determine which patients are at risk for future repeat operations.

Aim:

The aim of this study is to assess risk factors that increase the probability of patients to get future repeat abdominal surgery in general and at the same anatomical site.

Methods:

Validated population data from the Scottish National Health Service were used to identify patients who underwent abdominal and pelvic surgery between December 2008 and June 2011, repeat surgery was reviewed until December 2017. Primary outcome is overall incidence of reoperations in the abdomen. Secondary outcome is the incidence of reoperations at the same anatomical site. Uni and multivariable Cox regression was used to assess potential risk factors. Further we constructed a nomogram to assess individualized risks at 2-year and 5- years.

Results:

A total of 72 270 patients were included in the analysis. Independent risk factors for future reoperations female sex, IBD, malignancy, open surgery, operation in left lower quadrant, and surgery of the rectum. The rectum was the organ with the highest risk of reoperation ,30.2%, other organs with high risk of reoperation colon (18.7%, adnex and salpinx (17.9%), and liver (16.9%). Patients after open surgery had 15.0% of reoperation versus 8.6% of patients after laparoscopic surgery HR (1.23). 18.1% of patients with malignancy were reoperated, vs. 12.1% of patients without (HR 1.19).a 12.6% of male patients were Re-operated within 5 years vs. 13.4%. of female patients.

Discussion:

One out of ten patients is going to have Re-operation in the first 5 years. By using the nomogram surgeons can predict the individual risk to get repeat surgery in the future, and select high risk cases in whom adhesion prophylaxis should be considered.