Reviewer's report

Title: Evaluation of routinely reported surgical site infections against microbiological culture results: a tool to identify patient groups where diagnosis and treatment may be improved.

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Reviewer: Claire Lietard

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Evaluation of routinely reported surgical site infections against microbiological culture results: A tool to identify patient groups where diagnosis and treatment may be improved.

The aim of this study is to evaluate reported surgical site infection against microbiological culture results; the deal is to improve and identify patient groups where diagnosis and treatment may be improved.

Patients and methods:
701 admissions with SSI over a period of approximately 8 years.

In this study reporting a SSI was conditional on treatment being given and was classified by severity. SSI are classified in 4 categories: the fist one is temporary health disadvantage, second recovery after (re) operation, third one permanent damage or function loss the last is death.

I regret that the common SSI definition as 1) superficial 2) deep 3) organ or space have not been used and authors gave two different definitions of SSI: the CDC definitions and the nosocomial infection national surveillance service.

The CDC definition which is widely used, don’t need a wounds or blood swab. The CDC definition is clinical: purulent drainage or positive culture result or local symptoms unless culture result is negative. The fact that CDC definitions are not used is limits comparison with other studies.

Lastly, they compared the 701 admission with SSI reported by surgeons and the survey conducted among all surgical staff. This last survey was carried out by telephone.

Results:
Antibiotic treatment was reported to be initiated sooner in presence of osteosynthetic or prosthetic material, immunosuppressed patients, heart valve pathology and or diabetes.

When a SSI was suspected without additional sickness or risk factors treatment consisted in drainage only and 73.9% reported that they did not always take a wound swab when a SSI was suspected. Authors argue the surgeons may
improve their decision by culture results.

Comparing SSI with positive and negative culture results, positive culture results more often concerned SSI reported in high risk patients. The positive culture concern less often SSI reported in trauma and the less severe SSI. 75% of reported SSIs had a positive culture result, and 14.6% negative, more strange for 10.8% the result is unknown.

Question: What does it mean? Is it only because cultures have not been taken?

1. The question posed by the authors is well defined but must be completed.

2. The method is well described but there are uncompleted data. For example, Altemeier is never mentioned and surgeries with very different risk factors are compared. Authors argue that data have shown an increase in reported SSI over time. There are two questions:

   a- The first is to know whether these reported SSI are supported by culture

I- Major compulsory revisions:

Concern uncompleted data like Altemeier index.
Uncompleted data like rate of prosthetic by type of surgery
Statistical treatment of early subsequent surgery: are this surgery included in the database;
Rate of prosthesis or implant by type of surgery;
Treatment preventive antibiotic?

The title of table 2 is poor and must be change.

Statistical analysis: Chi–square test were used for categorical variables and t test for continuous variables; Characteristics included were: age at admission, sex, time period, ASA class severity of SS and type of surgical patient.

Type of patients was grouped into trauma patients, cardiovascular patients, patients having surgery on digestive or gastrointestinal tract and other patients.

What else about other patients??
The infectious risk factors are very different in those surgeries. it’s a bias to compare these surgeries.

II- Minor essential revisions

Why this SSI rate’s increase in 2001??
P10: figure1: what else about the SSI increasing in 2001? Is there any explanation?

Please give a 95% CI for SSIs rate.
Title of table 2 is poor.

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that i have no competing interests.