Surgical antibiotic prophylaxis in a Belgian teaching hospital: a retrospective evaluation

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Background & Objective

Antibiotic prophylaxis in surgery is one of the most important actions to prevent postoperative surgical site infections (SSI). When administered correctly infection rates can be reduced with 40-60%. Because correct use of antibiotic prophylaxis is so important, **guidelines** were introduced in the University Hospital Ghent in januari **2014**. The aim of this study was to **review** and **evaluate** the **compliance of the prescribers to this guideline**.

Setting & Method

Prophylactic use of antibiotics was **retrospectively** (03/12/2014 – 17/12/2014) evaluated using **six quality indicators**. Data were collected from the electronic medical record and pharmacy files. Results were compared to data from a previous evaluation and statistical analysis was done using IMB SPSS Statistics 21.0 (New York, USA).

Main Outcome Measures

Evaluation was done using **six quality indicators**:

INDICATOR 1 : antibiotic administration necessary and administered *100 / total surgeries in need of prophylaxis

INDICATOR 2 : registration of prophylaxis 60-0 min before incision *100 / total surgeries in need of prophylaxis and administered

INDICATOR 3 : prophylaxis ended within 24h after first administration *100 / total surgeries in need of prophylaxis and administered

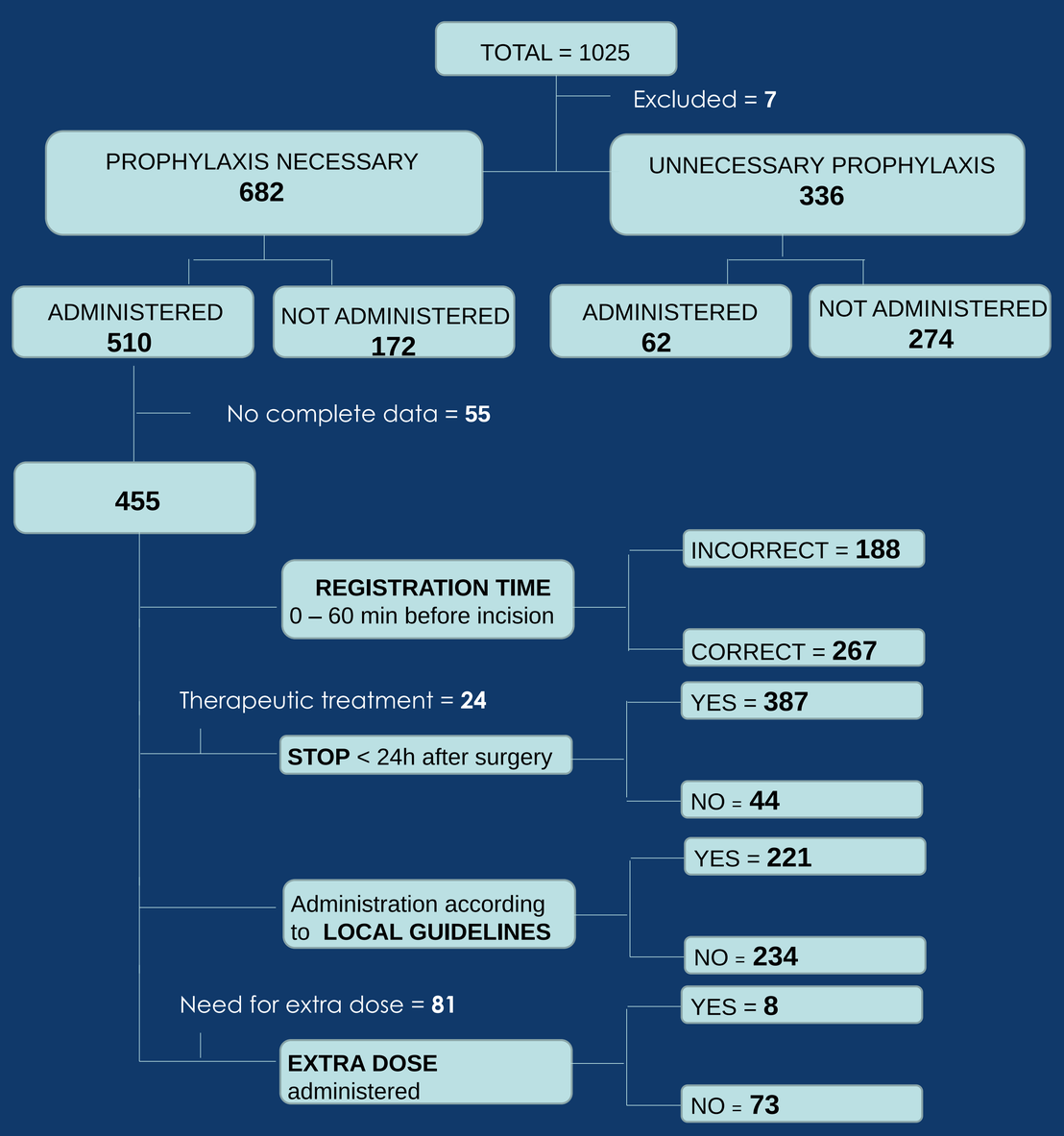
INDICATOR 4 : prophylaxis was according to local guidelines *100 / total surgeries in need of prophylaxis and administered

INDICATOR 5 : unnecessary prophylaxis administered *100 / total surgeries with unnecessary prophylaxis

INDICATOR 6 : administration of an extra dose when necessary *100 / total surgeries in need of an extra dosing of antibiotics

Results

A total of **1025 consecutive surgical interventions** were evaluated. Prophylaxis was necessary in 682 surgical interventions, only 510 patients (75%) received antibiotic prophylaxis and had it documented in their electronic medical record. 336 surgical interventions did not require antibiotic prophylaxis, but 62 (18%) received unnecessary antibiotic prophylaxis.
Only 267 patients (52%) received antibiotic prophylaxis within the correct administration window (60-0 min before incision). Antibiotic prophylaxis was terminated within 24h after the first administration in 387 patients (90%), after exclusion of patients receiving therapeutic antibiotic treatment. Only 221 patients (49%) received correct antibiotic prophylaxis according to the implemented guidelines. 81 surgical interventions required an extra dose during surgery, only 8 patients (10%) received the extra dose.



Conclusion

Compared to previous results, five out of six indicators scored worse in this evaluation. Evaluation of the use of antibiotic prophylaxis in surgical interventions is based on registration in the electronic medical record. If this registration is incomplete or documented later than effectively administered, data are influenced. Extra lessons and new implementation strategies seem necessary to improve the compliance to the guideline.

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