Pharmacist interventions for broad-spectrum antimicrobial drugs use in General Hospital Murska Sobota

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Background Rational use of antimicrobial drugs is essential for preventing resistance development which is most crucial in the reserve antimicrobials. One of the strategies to optimize pharmacotherapy with reserve antimicrobial drugs is to strictly control their prescription by the medical team by including a clinical pharmacist.

Purpose The aim of the present study was to reveal the importance of a clinical pharmacist in optimizing pharmacotherapy with reserve antimicrobial drugs, and to demonstrate better treatment outcomes in patients by considering appropriate pharmacist’s intervention.

Method The Special Order Form (SOF) for reserve antimicrobial drugs was developed in order to optimize treatment with reserve antimicrobial drugs. Investigation was conducted for prescribed therapies in 2015. The following data were collected: patient’s age, weight, height, glomerular filtration rate, liver or kidney disease, drug allergies, diagnosis, prescribed antimicrobial drug, dosage of the drug, duration of treatment and potential pharmacist’s intervention. Where intervention was needed, physician’s compliance to pharmacist’s advice (dose, duration of therapy, introduction of TDM) and treatment outcome was noted as well.

Findings A total of 2243 SOF for reserve antimicrobial drugs were reviewed. Pharmacist intervention was needed in more than a third of all cases (789 cases, 33.5 %). However, in only 32.1 % (253 cases) an intervention was actually made. Most of patients that received reserve antimicrobial drugs suffered from hospital acquired pneumonia (333 cases, 32.1 %) for which the most often prescribed broad-spectrum antimicrobial drug was ceftriaxone (648 cases, 28.9 %). Among the most needed interventions were reduction of therapy duration (325 cases, 35.1 %) and dosage optimization (224 cases, 24.2 %). Pharmacist’s advice was taken into account in 238 of cases (76.8 %). Nevertheless, the survival outcome showed that the recorded pharmacist’s advice did not significantly influence the treatment outcome (p = 0.117). However, although the influence is not significant, the trend shows positive results of the pharmacist advice.

Conclusion According to the conducted study pharmacists have an important role in the therapy optimization with reserve antimicrobial drugs. Their interventions were needed in more than one third of all cases. The evidence of increased pharmacist interventions is the motive for introducing an electronic ordering system and the reorganization of pharmacist’s work in the hospital.