

Improvement of antibiotic use in sore throat, tonsillitis and otitis media in Palestine West Bank: a prospective clinical audit/re-audit

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Background: Antibiotics misuse is increasing worldwide and multidrug-resistant pathogens is not uncommon now in Palestine (1-3). Antibiotics resistance is considered a serious threat that could be fatal both at the individual and populations level (4). The most common source of prescribing antibiotics in the medical field is in the treatment of upper respiratory tract infections (5). Acute upper respiratory tract infections (URTI) are generally caused by viral pathogens and do not require antibiotics in most circumstances (6). A previously done audits in Gaza, Saudi Arabia have reported that physicians did not generally follow the international guidelines for appropriate antibiotic use for URTI (7, 8). However, adherence to the international guidelines about both the need for prescribing antibiotic and the line of antibiotics prescribed for these conditions has never been checked in West Bank. The aim of this audit is to measure the adherence of Tubas Governmental Hospital Doctors to the international guidelines when treating sore throat, tonsillitis and otitis media and make at least 10% improvement in the compliance within 2 months of different interventions.

Methods – This study is a full cycle audit and re-audit that was done at Tubas Governmental Hospital , West Bank. Audit/Re-audit included 297 patients who presented during March/June 2022 respectively to the emergency department of Tubas Governmental Hospital with sore throat, tonsillitis or otitis media. Random shifts selection on daily basis, stratified by covering the highest possible different doctors after taking their consent to participate in this study. Audit and re-audit phases involved short interview with the doctors after dealing with cases of URTI at which the needed data were gathered. Intervention phase were held during April-May 2022 and included survey to access the underlying causes of the poor adherence, then oral and poster presentations of the URTI NICE guideline, oral presentation of audit results and recommendations, developing mobile/web applications that determines the need for antibiotics, and a circular to improve the noting of these cases. Written approval from Palestinian MoH and hospital administration was taken. Oral approvals from doctors to participate in the study were taken. Approvals from patients were waved as the required data has a minimal risk on them. Data were entered and analyzed using SPSS, results were presented using custom and custom tables. P-values of <0.05 were considered significant using chi square test.

Findings: –A total of 297 cases were observed in our study including 169 case in the audit phase and 128 case in the re-audit phase. 57.9% of the patients were males and 42.1% were females. 169 case were tonsillitis (56.9%), 88 case were sore throat (29.6%) and 40 case were acute otitis media (13.5%). The mean of FeverPAIN score of the 257 case of tonsillitis and sore throat was 2.45 ± 1.27 . An improvement in the adherence to international URTI antibiotics prescription guidelines in the re-audit phase than that of the audit phase was noticed. Positive changes in percentages of correct antibiotics prescriptions in the re-audit phase including : +6.5% positive change for correct direct antibiotics prescriptions, +44.4% for correct backup antibiotics prescriptions, +63.4% for correct no

antibiotics prescriptions. Additionally, positive changes in the percentage of prescribing first line antibiotic mainly amoxicillin of (+14.1%), also there is a reduction in prescribing second line antibiotics including amoxi-clav (-19.9%) , azithromycin (-2.4%), and cephalosporins.

Interpretations: Poor adherence to the international guidelines of antibiotic prescription for URTIs was found indicating a possible national problem. There is an obvious trend toward using the second line antibiotic for URTI in Palestine. Our interventions to improve compliance with national antibiotic guidelines for URTI appeared to have positively changed prescribing practice over a short period of time. This quality improvement work adds to an important of starting to use audits in West Bank. Moreover, we believe that the improvement strategies and approach used in our study could be carried out easily in other practices. Several limitations have faced us including refusal of some physicians to participate in the study, lack of time of physicians, forgetting part of the needed data during the interview, not attending oral presentations by physicians and refusal to use mobile/desktop applications by other physicians.