CORRESPONDENCE

Anti-tuberculosis treatment stewardship in a private tertiary care hospital in South India

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The private sector accounts for more than half of the tuberculosis (TB) care delivered in India, with major challenges in the quality of diagnosis and treatment.^{1–3} The indiscriminate use of anti-tuberculosis drugs outside the Revised National TB Control Programme (RNTCP) is an important factor fuelling the emergence of drug-resistant TB.⁴

Our hospital is a private tertiary care centre with an annual patient turnover of 800 000 out-patients and 50 000 in-patients. The hospital's Anti-Tuberculosis Treatment Stewardship (ATTS) is modelled on the already existing robust multidisciplinary antimicrobial stewardship programme, which has been conducting detailed daily audits of restricted antibiotic prescriptions and recommending changes to ensure appropriate prescribing.

The hospital's multidisciplinary team includes an administrator, a pulmonologist, an infectious disease specialist and clinical pharmacists. The team meets twice weekly to review patients receiving anti-tuberculosis treatment, with information collected daily by the clinical pharmacists.

All cases reviewed by the anti-tuberculosis treatment team are characterised as presumptive or definitive, in accordance with RNTCP guidelines. To ensure a definitive diagnosis, presumptive cases are further reviewed to ensure they are correctly referred for culture and nucleic acid testing. The team assesses the appropriateness of anti-tuberculosis treatment for each case following the '5Rs': Right indication, Right drug, Right dose, Right frequency and Right duration. The prescription is considered inappropriate if any of the 5Rs is incorrect. Recommendations are filed for inappropriate prescriptions after communication with the consulting physician via e-mail/telephone. The team also reviews the list of medications, and discourages the use of concomitant second- or third-line anti-tuberculosis drugs to minimise drug resistance.

Compliance with recommendations is evaluated. Patients are followed up by clinical pharmacists after discharge from the hospital by telephone to counsel and monitor adherence and to detect any adverse drug events early on. Our physician population is well informed about TB notifications to the RNTCP, and this has helped us notify all cases of presumed/definitive TB cases at our institution.⁵ While RNTCP predominantly monitors the treatment of TB as out-patients, ATTS focuses on in-patient care until completion of treatment post-discharge.

Of 114 patients reviewed from July 2017 to January 2018, 52% were definite cases, while 48% were clinically diagnosed. Pulmonary and extra-pulmonary TB each accounted for 47% of patients; the remaining 6% had disseminated TB. Of the 114 patients, 12% (14/114) were inappropriately initiated on anti-tuberculosis treatment. Anti-tuberculosis treatment was appropriate (all 5Rs) for 57% ($n = 27$) of the pulmonary TB cases, and for 53% ($n = 25$) of the extra-pulmonary TB cases. Of the 47 instances of inappropriate prescription among pulmonary TB patients, 23% ($n = 11$) were incorrect drug selection, 34% ($n = 16$) incorrect dose and 2% ($n = 1$) incorrect frequency. Reasons for inappropriateness in the extra-pulmonary TB cases were as follows: 11% ($n = 5$) inappropriate drug selection and 38% (18) incorrect dose. Adherence to the ATTS recommendations was 42%.

To our knowledge, this is the first such effort of its kind in India. Our model is easily replicable in tertiary care settings where resources for ensuring diagnostic accuracy and personnel capable of forming a stewardship team are available. At primary and community health centres with a limited number of physicians, periodic meetings with health care professionals and the stewardship team of satellite tertiary settings can be conducted using telemedicine. Our experience highlights how TB diagnosis and treatment can be improved by establishing antimicrobial policies and programmes in hospitals.

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