Outcome of Smear Positive Pulmonary Tuberculosis Patients with Acute Respiratory Failure on Non Invasive Ventilation in a Tertiary Care Hospital

ABSTRACT

Pulmonary tuberculosis (PTB) coupled with Acute Respiratory Failure (ARF) usually heralds a dismal patient outcome. Admission to the Intensive Care Unit (ICU) along with Invasive mechanical ventilation (IMV) in PTB patients is usually associated with very high mortality. Non-invasive Ventilation (NIV) when applied early in such patients has the potential to prevent intubation and improve prognosis in terms of reduced morbidity and/or mortality. We conducted a prospective study in our Institute where NIV was applied to 35 patients with smear-positive PTB who had concurrent Acute Respiratory Failure (ARF). Fourteen patients (40%) improved on NIV and were later discharged on treatment (survivors). The remaining patients (60%) were candidates for IMV but none survived. Statistically significant predictors of mortality in our study were multiple courses of anti-tubercular treatment in the past, advanced disease as assessed radio-graphically, presence of leucocytosis, drug resistance and pH < 7.25. Our study is unique in the fact that it has addressed NIV in active PTB on which very scant literature is available. Our results indicate that a significant proportion of PTB patients with ARF may benefit from NIV based on astute and diligent patient selection and prompt institution of the procedure along with ATT and other supportive therapy. Our study also provides some tentative evidence that patients who fail NIV may not benefit from IMV. How much of this is due to the advanced lung disease and poorer metabolic status of the patient along with co-existent nosocomial infections needs to be elucidated by further studies.