Abstract:

AIMS: Diagnosis of ventilator-associated pneumonia in newborns is challenging because of ease of colonisation, non-specific chest radiograph changes and lack of a consensus definition. The aims of this study were to review treatment decisions in neonates with culture-positive endotracheal aspirate and to assess impact on respiratory outcomes using blinded review of radiological studies. METHODS: Charts from all very low birthweight neonates ventilated for >48 h and with positive culture were assessed. Chest radiographs were reviewed by a radiologist masked to the grouping of the episode (treated/not treated). Clinical, investigational and radiological features used in practice were assessed on impact on treatment decisions. Association between treatment and outcomes was assessed. RESULTS: Seventy-four episodes of culture-positive endotracheal aspirate were analysed in 38 babies. Fifty-eight episodes were treated with antibiotics. Gestational age at birth and birthweight in both groups (treated vs. non-treated) were statistically comparable (25.5 ± 3.1 vs. 27.2 ± 2.3 weeks and 809 ± 302 vs. 870 ± 262 g). Comparative chest radiographs were available in 51 of 58 treated episodes; deterioration was noted in 42 (82.3%). Ventilatory parameters were significantly higher in the treatment group and showed a significant improvement after antibiotics. Twenty-three babies developed chronic lung disease. Odds ratio (of having chronic lung disease when treatment is initiated) was 4.5 (95% confidence interval = 0.97-20.8, P= 0.06). CONCLUSIONS: Treated culture-positive aspirate episodes were accompanied by higher ventilatory requirements, increased symptoms and elevated septic markers. Need for treatment was associated with greater likelihood of developing chronic lung disease.