Abstract

Objective

To determine the extent and pattern of treatment failure (TF) among children hospitalised with community-acquired pneumonia at a large tertiary hospital in Kenya.

Methods

We followed up children aged 2–59 months with WHO-defined severe pneumonia (SP) and very severe pneumonia (VSP) for up to 5 days for TF using two definitions: (i) documentation of pre-defined clinical signs resulting in change of treatment (ii) primary clinician's decision to change treatment with or without documentation of the same pre-defined clinical signs.

Results

We enrolled 385 children. The risk of TF varied between 1.8% (95% CI 0.4–5.1) and 12.4% (95% CI 7.9–18.4) for SP and 21.4% (95% CI 15.9–27) and 39.3% (95% CI 32.5–46.4) for VSP depending on the definition applied. Higher rates were associated with early changes in therapy by clinician in the absence of an obvious clinical rationale. Non-adherence to treatment guidelines was observed for 70/169 (41.4%) and 67/201 (33.3%) of children with SP and VSP, respectively. Among children with SP, adherence to treatment guidelines was associated with the presence of wheeze on initial assessment ($P = 0.02$), while clinician non-adherence to guideline-recommended treatments for VSP tended to occur in children with altered consciousness ($P < 0.001$). Using propensity score matching to account for imbalance in the distribution of baseline clinical characteristics among children with VSP revealed no difference in TF between those treated with the guideline-recommended regimen *vs.* more costly broad-spectrum alternatives [risk difference 0.37 (95% CI −0.84 to 0.51)].

Conclusion

Before revising current pneumonia case management guidelines, standardised definitions of TF and appropriate studies of treatment effectiveness of alternative regimens are required.