Which Factors are Important in Determining the Length of Stay in Bronchiolitis?

Sir

Bronchiolitis is the most common lower respiratory infection in infancy\(^1\). Interventions may include hydration, oxygen therapy\(^1,2\) and, in selected cases, radiography\(^2\). Available data does not support the use of viral studies and blood tests to diagnose bronchiolitis\(^2,3\). We set out to determine whether investigations impact on the length of stay in infants with bronchiolitis.

We studied 217 infants (<13 months) admitted between 1/10/14 – 1/7/15. The mean (SD) age was 5.2 (3.5) months and the mean (SD) length of hospital stay (LOS) was 2.3 (2.0) days. Of 217 infants, 102 (47%) had blood tests including FBC and CRP; mean (SD) WCC 12.3 (4.7)\(\times\)10\(^9\)/L, neutrophil 5.3 (4.0), lymphocyte 5.2 (1.9) and CRP 17.1 (27.6) mg/L. Less than half of infants (97 of 217; 44.7%) underwent chest X-ray. This was reported normal in 27 (27.8%), however features consistent with a viral infection were suspected in 53 (54.6%) infants and consolidation was reported in 17 (17.5%). Nasopharyngeal aspirate (NPA) was performed in 176 of 217 [81\%] infants, of which 115 (65.3%) were RSV, 11 (6.3%) Human metapneumovirus and 2 (1.1%) Parainfluenza type 3 positive. No virus was isolated in 48 of 176 (27.3%) infants. There was no significant correlation between LOS and age at presentation (\(p\) value = 0.11). Similarly, no significant association was found between LOS and WCC (\(p\) value = 0.3), neutrophil (\(p\) value = 0.73), lymphocyte (\(p\) value = 0.69) or CRP (\(p\) value 0.97). In this group of patients, mean (SD) LOS did not differ significantly between infants with abnormal chest x-ray [1.96 (1.89) days], those with x-ray features suggestive of viral infection [2.51 (2.18)] and individuals with consolidation [1.94 (1.48)] (\(p\) = 0.39). Notably, there was a significant difference in LOS between infants with RSV infection [mean (SD) 2.75 (2.16) days] and those with negative NPA results [mean (SD) 1.79 (1.62) days] (\(p\) = 0.007). However, LOS did not differ between infants with non-RSV positive aspirates [mean (SD) 2.31 (1.32) days] and those with negative aspirates [mean (SD) 1.79 (1.62)] days (\(p\) = 0.29).

In conclusion, for infants presenting with clinically diagnosed bronchiolitis, FBC, CRP and chest X-ray do not impact on LOS. A significant association between RSV infection and prolonged LOS has been identified. These findings support current guidance recommending minimal investigations in managing bronchiolitis.

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References