Seasonal variation in the epidemiology of sepsis and pneumonia
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Objective: Seasonality is an important aspect of disease manifestation as well as a clue to the etiology of disease. Consistent seasonal behaviour suggests the possibility of predictable behaviour. We sought to investigate seasonal variability in the epidemiology of sepsis and pneumonia to identify underlying associations based on seasonal respiratory infections.

Methods: Retrospective cohort study using the National Hospital Discharge Survey between 1997 and 2007. We evaluated the seasonality (summer, autumn, winter, spring) of hospital admissions and mortality rate of sepsis and pneumonia in children from 28 days through 19 years with diagnosis of bacterial sepsis and pneumonia defined by the criteria of the International Classification of Diseases 10 code.

Results: The admission of sepsis reduced 40% and 60% for pneumonia in the period. Pneumonia admissions were high in the winter and autumn (p<.05). And for sepsis admissions high in the autumn (p<.05), but couldn’t associated to increase of pneumonia episodes. The ARIMA and Winters additive models didn’t explain the variability of sepsis admission. The mortality rate for sepsis was high in the winter and for pneumonia the mortality rate was constant (p>0.05).

Conclusion: The incidence of sepsis was high during the autumn but the mortality rate was highest during winter. Seasonal model didn’t explain the variability of sepsis admissions and mortality rate. The mechanisms underlying these differences require further investigation.