

Respiratory rate corrected for age and temperature in diagnosis of lower respiratory infection in children

Respiratory rate is important in the diagnosis of lower respiratory tract infection in children but it may be affected by age and body temperature. Data from a single children's emergency department in the Netherlands have been used to derive age and temperature-dependent reference values for respiratory rate in febrile children.

The derivation population consisted of 1555 children under the age of 16 years. Centile charts for respiratory rate were constructed for children of different ages and body temperatures. A validation population of 671 children was used to compare respiratory rate and temperature values for children of different ages with pneumonia, other lower respiratory infections, and non-lower respiratory infections. Overall, respiratory rate increased by 2.2 breaths per minute with every 1°C rise in body temperature. Respiratory rate values above the 97th centile on the new age- and temperature-dependent charts were more useful in the diagnosis of lower respiratory tract infection than was use of existing respiratory rate thresholds but could not discriminate between pneumonia and other lower respiratory tract infections. They gave a specificity of 0.94 and a positive likelihood ratio of 3.66. In infancy the 97th centile value for respiratory rate was 69 breaths/min with a temperature of 37.0 to 37.9°C and 75 breaths/min with a temperature of 39.0 to 39.9°C. At ages 5 to 16 years the corresponding values were 36 and 44 breaths/min.

Centile charts for respiratory rate taking into account age and body temperature may be useful in the diagnosis of lower respiratory tract infection in children. The data should be used only to add strength to diagnosis of lower respiratory infection and not to dismiss it.

The study was reported in the *British Medical Journal*.

Delamanid for multidrug-resistant pulmonary tuberculosis

Worldwide about 5% of cases of tuberculosis are multidrug-resistant. Such cases are difficult to treat, requiring combinations of up to six drugs and with lower cure rates than with drug-susceptible tuberculosis. Delamanid (OPC-6783) is a new antituberculous drug, a nitro-dihydro-imidazoazole derivative that inhibits mycobacterial synthesis of mycolic acid and is active against drug resistant strains of *Mycobacterium tuberculosis* in vitro and in vivo. A multicentre trial in nine countries, reported in the *New England Journal of Medicine*, has shown that delamanid is effective in multidrug-resistant pulmonary tuberculosis.

A total of 481 HIV-negative patients with multidrug-resistant pulmonary tuberculosis were given a background drug regimen and randomised in addition to delamanid 100 mg twice daily, delamanid 200 mg twice

daily, or placebo. Sputum-culture conversion in liquid broth at 2 months was achieved in 45% (100 mg dose), 41.9% (200 mg dose), and 29.6% (placebo), a significant improvement on placebo for both doses of delamanid. Most adverse events were of mild or moderate severity and occurred at similar rates in the three groups. Delamanid was significantly associated with prolongation of the QT interval on ECG but there were no clinical events associated with this finding.

Delamanid increased the rate of sputum-culture conversion at 2 months in patients with multidrug-resistant pulmonary tuberculosis.

ACE inhibitors, ARBs, and pneumonia

It has been suggested that ACE inhibitors may protect against pneumonia. A systematic review and meta-analysis has been reported in the *British Medical Journal*.

Thirty-seven studies were included in the review. The risk of pneumonia was reduced significantly by 34% with use of ACE inhibitors compared with control treatment and by 31% compared with angiotensin receptor blockers (ARBs).

ACE inhibitors seem to protect against pneumonia but ARBs do not. It is suggested that patients might try to continue with ACE inhibitor treatment despite a mild cough, but an editorialist points to faults in the design of this study and disagrees with the suggestion given the uncertainty of present evidence.

New 'Sars-like' coronavirus identified by UK officials

A new respiratory illness similar to the Sars virus that spread globally in 2003 and killed hundreds of people has been identified in a man who is being treated in Britain.

The 49-year-old man, who had been visiting Qatar, is the second person confirmed with the coronavirus. The first case was a patient in Saudi Arabia who has since died.

Officials are still determining what threat the new virus may pose. The World Health Organization has not recommended any travel restrictions.

Prof John Watson, head of the respiratory diseases department at the UK's Health Protection Agency, said: 'In the light of the severity of the illness that has been identified in the two confirmed cases, immediate steps have been taken to ensure that people who have been in contact with the UK case have not been infected, and there is no evidence to suggest that they have.'

'Further information about these cases is being developed for healthcare workers in the UK, as well as advice to help maintain increased vigilance for this virus,' said Prof Watson, adding that there was no specific evidence of the virus spreading from person to person.

Peter Openshaw, director of the Centre for Respiratory Infection at Imperial College London, said that at this stage the novel virus looked unlikely to prove a concern, and may well only have been identified due to sophisticated testing techniques.