Background and aims Nasal high frequency oscillation ventilation (nHFOV) is a non-invasive ventilation mode that applies an oscillatory pressure waveform to the airways using a nasal interface. nHFOV has been shown to facilitate carbon dioxide expiration, but there is little data about its use in neonates. Therefore, the aim of this survey was to collect data about nHFOV use in neonatal intensive care units (NICUs).

Methods From June 2013 to February 2014, we conducted a prospective survey in Austria, Switzerland, Germany, the Netherlands and Sweden. A 26-item questionnaire was sent to NICUs who provide the highest level of care. We asked for indications to start nHFOV, equipment used, nHFOV settings and observed side effects.

Results Of all contacted NICUs, 172/186 (92%) participated. Among those responding, 30/172 (17%) used nHFOV, most frequently in premature infants. The maximum pressure 10–18 cm H₂O and pressure before switching to nCPAP 7.5–15 cm H₂O. The typical nHFOV frequency was 10–15 Hz. Abdominal distension (11/30), highly viscous secretions (7/30) and upper airway obstruction due to such secretions (8/30) were the most common nHFOV side effects.

Conclusion Based on individual experience, a number of European NICUs use nHFOV. There are substantial differences in nHFOV equipment, indications and settings. New clinical studies are needed to further investigate the risks and benefits of nHFOV in neonates.

Background Lung ultrasonography (LUS) is advocated as a tool in diagnosis of paediatric community-acquired pneumonia (CAP). Necrotizing pneumonia, a complication of paediatric CAP, is usually diagnosed by using chest computed tomography (CT). The aim of our study was to evaluate the value of LUS in diagnosis and outcome prediction of paediatric necrotizing pneumonia.

Materials and methods Children, being undergone LUS and diagnosed with CAP, were enrolled. The image findings of enrollers, who receiving chest CT within 5 days, were then analysed for the agreement between LUS and CT. Predictors of clinical outcome were further investigated using the characteristics of LUS.

Results Among children (n = 236) with CAP and undergoing LUS, 96 children also received chest CT within 5 days, were then analysed for the agreement between LUS and CT. Predictors of clinical outcome were further investigated using the characteristics of LUS.

Conclusion LUS offers substantial concordance with chest CT in diagnosis of paediatric CAP with necrotizing change. Some characteristics of LUS, such as impaired perfusion and hypoechoic spaces, provide good prediction of poor clinical outcome. It should be routinely used in the clinical care of paediatric CAP.