The overall mortality rate was 92%, the duration of hospitalization was between one and 137 days.

**Conclusion** In our study, it has been seen that NCPAP may not be an effective ventilation strategy in premature infants who are at the limits of viability. The high proportion of chorioamnionitis in this group may affect the ventilation and the following problems. These babies are needed to be care at very special settings.

**Results** In all breaths studied 38% of breaths showed valid signals in all channels without movement artefacts. Of all signals, RIPabdsignal was followed by GC-signal (±10±177ms). Both signals had a reasonable variability. The Piezo-signal was very sensitive and prone to large variations (+70±1372ms compared to Pes). RIPchest indicated inspiration later than RIPabd (±104±212ms).

**Conclusion** These data indicate that both RIPabds and Graseby Capsule are suitable surface sensors for non-invasive synchronization of NIPPV whereas a Piezo sensor exhibited large variability. Signals from all studied sensors were only suitable for a limited amount of time.

**Background** nIPPV is widely spread in Spanish neonatal units. Little evidence about the best mode of delivery or the appropriate ventilatory parameters of nIPPV is available.

**Aim** of this study was to assess the current use of nIPPV in Spanish neonatal units.

**Methods** A survey was designed and sent by email to neonatal units. The survey collected information about the devices and the ventilatory parameters used to deliver nIPPV over 2010. The use of synchronisation was also interrogated.

**Results** 87 out of 115 questionnaires were answered and returned (75.6%). 71 units used nIPPV (51.6%). Infant Flow® was the most used device (48/71; 67.6%), followed by conventional ventilators (38/71, 53.5%). The initial ventilatory parameters depended on the device that was used. When Infant Flow® was used, PIPs were set between 6 and 10 cmH2O, whereas when a conventional ventilator was used, PIPs varied between 8 and 15 cmH2O. In contrast, PEEP, inflation rate and inflation time were set in a more stable range regardless of which device was used. Regarding synchronisation, only 13/71 units (18.3%) always used synchronisation, whereas 27/71 units (38%) only used it in some cases. The pneumatic capsule was most frequently used when synchronisation was provided with a percentage of 52% (21/40 units).

**Conclusion** The most used device to apply nIPPV in Spanish neonatal units was a variable flow device. Overall, low PIP and low inflation rates were set at the beginning of this therapy. Synchronisation was scarcely used.