10 Hz and the amplitude set at equal to the MAP value at the beginning, was increased, if necessary, until the infant’s chest was seen to be “bouncing”. In the HFOV+VG mode, the VThf was set at 2 ml/kg initially on the basis of our clinical experience. The Amplitude limit was set at 15-20% above the average amplitude needed to achieve the target VThf. Moreover during each 2 h observation period, the following variables were continuously displayed at 5-min intervals: FiO2, MAP, VThf, Carbon dioxide diffusion co efficiency (DCO2), Amplitude (DeltaPhf), from the ventilator records and heart rate, mean blood pressure, SpO2 from the standard cardiorespiratory monitor.

Results The mean gestational age was 28.2 (24-32) week and the mean gestational weight was 1087 (704-1960) gr. There was no significant difference in the mean PCO2, FiO2, DeltaPhf, MAP, VThf, DCO2, Minute ventilation (MVe), Dynamic compliance (CDyn), Resistance (R). Hypocarbia event (PCO2 <40 mmHg) occurred eleven (%36) sample during HFOV+VG mode for neonatal patients and can achieve equivalent gas exchange After a careful analysis of the results, a set VThf of 1.5 ml/kg seems to be successful achieving equivalent gas exchange using lover airway pressure.

Conclusion This preliminary result demonstrated that VG option, when combined with HFOV, a stable and feasible ventilation mode for neonatal patients and can achieve equivalent gas exchange After a careful analysis of the results, the set VThf of 1.5 ml/kg seems to be successful achieving equivalent gas exchange using lover airway pressure.

PO-0743 USE OF A NEW-GENERATION ELECTRONIC MICROPUMP NEBULISER TO DELIVER BUDENSONE IN CHRONIC LUNG DISEASE: A FEASIBLE ALTERNATIVE TO SYSTEMIC DEXAMETHASONE?

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Background and aim Inhaled corticosteroids reduce lung inflammation in chronic lung disease (CLD) and may be safer than systemic dexamethasone treatment, but evidence of better efficacy is lacking. State-of-the-art aerosol delivery systems may permit enhanced alveolar steroid delivery compared with traditional metered-dose inhalers/spacers or jet nebulisers. We evaluated a new-generation electronic micropump vibrating-mesh nebuliser for topical airways delivery of budesonide in infants with severe CLD requiring nasal high-flow respiratory support.

Methods We reviewed our units’ clinical experience of delivering budesonide via the Vapotherm ventilation circuit to infants with established CLD using the Aeroneb Pro-X (Aerogen, Ireland) nebuliser.

Results 7 babies with severe CLD received nebulised budesonide since 2013. Median (range) birth gestational age was 26.9 (23.1-27.7) weeks, birthweight 720 (490-850) g. Nebulisation commenced at age 62 (29-104) days postnatal, by which time 6 babies had accumulated 33 (10-49) days’ systemic dexamethasone. Initial budesonide dosage was 0.5 mg/dose administered 2-4 times/day. Duration of nebulisation prior to discharge/back transfer was 55 (9-69) days. Nebulisation permitted successful weaning from dexamethasone within 8 (0-20) days in 6 babies and obviated the need for systemic dexamethasone in another. After starting nebulisation, no baby needed a subsequent oral dexamethasone course before discharge/back transfer.

Conclusion Use of a new-generation electronic micropump nebuliser for topical airways budesonide delivery to nasal high-flow dependent infants is feasible and may avoid the need for systemic dexamethasone. The comparative safety and efficacy of this new technology for steroid delivery to ventilatory support-dependent CLD babies should now be formally examined in clinical trials.

PO-0744 GENOME-WIDE ASSOCIATION STUDY OF BRONCHOPULMONARY DYSPLASIA

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Background and aims Bronchopulmonary dysplasia (BPD) is the most common chronic disease associated with very preterm birth. BPD has a significant genetic background but the predisposing genes are insufficiently known. The aim is to find genetic factors that predispose to moderate-severe BPD using a hypothesis-free, genome-wide approach.

Methods The study populations included preterm infants (gestational age <31 weeks) born during 1997-2013 in Oulu, Tampere, and Kuopio.
Conclusions In genome-wide association study of BPD, we detected suggestive association signals (p < 0.001) and higher Ges- tational age (p < 0.05). Presence of liver and/or spleen as part of hernia contents correlates negatively with the primary outcome (p < 0.05).

Conclusion This is the first study that outlines the mortality and morbidity and their risk factors in Palestinian Territories with no ECMO is used demonstrating fairly good outcome with gentle ventilation strategies and antenatal diagnosis.

University Hospital and during 2010–2013 in other Finnish Uni-
versity Hospitals (Helsinki, Kuopio, Tampere, Turku). DNA sam-
ple were genotyped using the Illumina HumanCoreExome BeadChip consisting of approximately 550,000 single-nucleotide polymorphisms (SNPs); after quality control, 60 cases (moderate-severe BPD) and 114 controls (no or mild BPD) remained after a genome-wide association study (GWAS). In the next step, approximately 200 SNPs showing suggestive signals are geno-
typed in additional infants (n = 116/232) to determine which associations are replicated.

Results In GWAS, we detected suggestive association signals (p < 1 × 10⁻⁶) for several SNPs; many of these SNPs were located within or near genes that can be considered as plausible candidate genes for BPD (e.g. the CRP and PIPTN6 genes encoding C-reactive protein and protein-tyrosine phosphatase SHP-1, respectively). Some of the SNPs showing suggestive associations in two previous GWASs of BPD showed weak associations (e.g. those within the PALM2 and CTNNA3 genes).

Conclusions In genome-wide association study of BPD, we detected several suggestive associations. These initial results require verification in subsequent studies, including replication in additional populations and functional studies of the arising candidate genes.

**PO-0746** RESPIRATORY SUPPORT IN TERM NEWBORNS AFTER C-SECTION

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**Background and aims** After c-section term newborns are at risk of respiratory problems. Whereas some newborns require respiratory support only for a short time in the delivery room (DR), others are admitted to the NICU for prolonged therapy. Our aim was to compare differences between newborns with respiratory support in DR only and those admitted to the NICU.

**Methods** Retrospective analysis of video recorded DR-management of term newborns born between January 2012 and November 2013 via c-section.

**Results** 368 newborns were analysed with 82 (22%) receiving respiratory support. From them, 26 (32%) were transported to NICU for further treatment, the remaining 56 (68%) were stabilised after a short period of CPAP treatment. There were no demographic differences between both groups. CPAP-administration started after a median of 3.4 (0.2–27) in NICU and 3.7 (0.03–17) minutes in DR infants. At the start of CPAP administration infants had a median heart rate of 161 (75–195) in NICU and 153 (56–200) in DR newborns and SpO2 of 69 (41–100) and 80 (55–100) respectively (p = 0.01). 8 (31%) NICU and 15 (27%) DR newborns received a sustained inflation; mechanical ventilation via face-mask received 4 and 6 newborns respectively. In infants remaining in the DR respiratory support was stopped after a median of 7.6 (0.2–21) minutes, infants were transferred to the NICU after a respiratory support of 17.7 (4–29.6) minutes respectively.

**Discussion** Except for lower SpO2 values there are no parameters to predict the need for the length of treatment in respiratory depressed term newborns.

**PO-0747** THE STUDY OF OXIDATIVE STRESS AT PREAMINISATION NEWBORNS WITH RESPIRATORY DISTRESS SYNDROME

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**Aim** The diseases of newborns which involve oxidative stress are: respiratory distress (RDS), bronchopulmonary dysplasia, retinopathy and necrotizing enterocolitis. The aim of the study was to evaluate the oxidative stress through the lipid peroxidation at preterm newborns with RDS.

**Material and methods** We conducted a prospective, non-rando-
mised study. The study group was represented by sixty preterm newborns with RDS. The control was represented by 20 healthy late preterm newborns. For all patients family’s consent was obtained. The study of the oxidative stress was performed by the measurement of malondialdehyde (MDA) by Satoh’s method. For each newborn we determined the MDA on the first and third day of life. For the control was carried out one determination on the first day of life. The statistical analysis was done using the SPSS program.

**Results** The RDS was present in mild form at 35% newborns, medium form at 42% and severe form at 23%. Seven newborns presented neonatal sepsis. Cerebral haemorrhage was present at 12 newborns of the study group. At 13 preterm the