A previous audit demonstrated that the guidance for target saturations was not being followed appropriately in all cases.

Methods Our aim was to review compliance with oxygen targeting prescriptions and the alarm limits used during saturation monitoring.

We collected data over three consecutive weeks during December 2011 for all babies on the neonatal unit who were monitored (n=102).

Results Compared to the previous audit we found there was an improvement in the set alarm limits to target oxygen within the guidelines to be correct 88% versus 69%. However compliance with oxygen prescribing was suboptimal with 78% at best.

Conclusions Despite a change in the target saturation guidelines compliance with saturation alarm limits has improved. However further work is needed to ensure that all babies have their alarm limits set within the target range and also have their requirements for oxygen prescribed as per trust guidance.

It is also important to remember that setting the alarms correctly is only a step in oxygen targeting and that ideally the percentage of time in the target range should also be assessed.

1629 NOISE POLLUTION IN INTENSIVE CARE UNITS AND EMERGENCY WARDS

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Technology development has increased sound level beyond standards in hospitals. Such pollution undoubtedly has negative effects on staff health and quality of care accordingly. Our goal with this study carried out to investigate noise levels in intensive care and emergency wards in Emam Reza hospital, at Mashhad University, Iran.

Materials and Methods This was a prospective study that performed on measuring of sound level of 10 intensive care and emergency wards of Imam Reza Hospital in a 30-minute-interval of AM working shift at one meter distance from nursing stations getting maximum sound level (L_{max}) and Average Sound Level (L_{eq}).

Results L_{max} in most wards were between 85–86dB. L_{eq} in all wards were between 60.2 dB. Average L_{eq} in emergency wards was 62.2 dB without any justification. (L_{eq}) in NICU was 60.8 dB (beyond standard level). In most of wards peak of noise were between 9:30–11 AM. L_{eq} in all wards were more exceeded the standards levels.

Conclusion The average of sound levels in our wards remarkably exceeds the standards levels. The hospital staff should be aware of this noise level and its effects.

1630 CENTRAL VEIN CATHETER AND BLOODSTREAM INFECTION IN A PICU: CLABSI OR CRBSI?

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Aims To differentiate between Central Line Associated Blood Stream Infections (CLABSI) and Catheter Related Blood Stream Infections (CRBSI) where the same microorganism is identified on catheter tip cultures and the bloodstream, in Pediatric Intensive Care Unit (PICU) patients.

Methods Prospective 1 year study of CLABSI (group 1- all patients with a CVC in situ) and CRBSI (group 2-only first, temporary CVC, inserted in PICU, during first admission). CLABSI and CRBSI rates were estimated according standard criteria. CVC insertion and maintenance was under local protocols (simple polyurethane, multiple lumen, plus chlorhexidine-gluconate- impregnated sponge,

stayed as long as needed if they were functioning without evidence of local or systemic complications).

Results 91 patients have had a total of 136 CVCs insertions. 112 temporary and 24 permanent catheters were evaluated for CLABSI whereas 73 CVCs were evaluated for CRBSI. Mean catheter days in group 1 was 11.95 ± 12.48 and 20 cases of CLABSI were recorded in 1626 catheter days, given a CLABSI rate of 12.3:1000, whereas mean catheter days in group 2 was 9.30 ± 5.23 with 1 case of CRBSI in 679 catheter days, given a CRBSI rate of 1.47:1000. 11 Gram -, 8 Gram + and 1 fungal infection were recorded in group 1, and only 1 Gram - infection in group 2.

Conclusions Strict adherence to protocols in group 2 led to much lower CRBSI compared to CLABSI. Gram - infections predominated. Reducing CLABSI and CRBSI over time, after implementation of bundles of care, should be the goal.

1631 CHANGE OF HABITS AFTER YEARS OF EVIDENCE: A QUESTIONNAIRE ON NEONATAL CARE

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Background and Aims Evidence based knowledge in neonatal care has substantially increased during the last years. We tried to evaluate how well guidelines and evidence from studies have been implemented into clinical practice during the last 15 years.

Methods Detailed questionnaires were sent 15 years apart to all neonatal units potentially treating VLBW infants in Germany (1995) and all German speaking countries (2010).

Results The response rate was 66% both times. Whereas in 1995 $\frac{2}{3}$ of the units used 100% oxygen and $\frac{1}{4}$ 50% to start respiratory support in the delivery room, in 2010 only 3% and 5% of the units used 100% and 50% oxygen, respectively. Caffeine and Theophylline were used to treat apnoea of prematurity by 50% and 87% of the units in 1995 compared to 96% and 10% in 2010, respectively. Pasteurization of breast milk was done in 24% of the units in 1995 compared to 53% in 2010. In 1995, 37% of the units routinely used erythropoietin in ELBW infants compared to 27% in 2010.

Conclusions Treatment of VLBW infants changed significantly within the last 15 years and some of the existing guidelines and evidence seem to be transferred into clinical practice in most units.

1632 QUALITY CLINICAL IMPROVEMENT: PROSPECTIVE TEST OF CHANGE

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Background Change is a fundamental component of continuous quality improvement. Surfactant clearly works better the earlier it is given in at risk babies. Previously, surfactant was given after transfer to the NICU due to concerns such as the grade of doctors who were present during these deliveries and endotracheal (ETT) position. With the introduction of resident consultants, the NICU service became a fully consultant-delivered care and therefore always present at the stabilisation of these infants.

Audit of Practice Showed Surfactant administration at mean of 39min (9 min outside our set protocol time), with wide variability.

Aims

- Feasibility and safety issues of giving surfactant right after intubation on Delivery suite,

Mean time to surfactant administration and ETT position post-change.

Methods Time: 10/2010- 02/2011

- Babies < 28wks and those at risk of RDS with ETT placement on DS in view of risk to RDS & for surfactant administration

Results

- Change of site of administration was easy
- Shorter Mean time of administration from 39.1 to 12.8 min
- Decrease in variability to time of administration (Standard Deviation decrease from 22.1 to 7.6 min ($p < 0.0001$))
- Identification of sub-optimal ETT position as a safety issue; introduction of evidence-base for ETT position, training, leading to significant improvement.

Abstract 1632 Graph I

Abstract 1632 Graph 2

Conclusion

- Use of evidence-based medicine, team training, audit cycle application to improve target outcomes and patient safety.

1633 THE EFFECTS OF SYNBIONICS ON MORBIDITY AND MORTALITY IN NEWBORNS WITH CYANOTIC CONGENITAL HEART DISEASE: A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

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Background and Aim In cyanotic congenital heart diseases (CCHD), with the changes in intestinal flora, necrotizing enterocolitis (NEC) and sepsis frequency increases. In this study, the effect of synbiotic use on morbidity and mortality in newborns with CCHD is evaluated.

Methods Fifty-seven newborns with CCHD were randomly assigned to receive either synbiotic [probiotic: *Bifidobacterium lactis*, 5x10 colony forming unit, 30mg+prebiotic: Chicory inulin, 900 mg (1 sachet/day Maflor®, Cidex), n=29] (Group-1) or placebo (n=28) (Group-2). Synbiotic or placebo was started with the first enteral feeding after hospitalization in NICU and continued until the infants were discharged.

Results There was no difference regarding the demographic and clinical features between groups. No difference was stated considering the first enteral feeding age and the time interval to reach full enteral feeding between groups. It was also observed that the duration of mechanical ventilation in Group-1 was shorter ($p=0.007$). Early and late clinical sepsis rate and late culture proven sepsis were lower in Group-1 ($p=0.001$). NEC (stage ≥ 2) was significantly higher in Group-2 ($p=0.01$). The frequency of increased gastric residuals during enteral feeding was less in Group-1 ($p=0.001$). The mortality rate was significantly lower in Group-1 ($p=0.02$). In multiple regression analysis it was observed that synbiotic use reduces mortality independently from birth weight, gender and surgical attempt ($p=0.01$).

Conclusion Introduction of synbiotics with the first enteral feeding in newborns with CCHD after hospitalization in NICU shows a positive effect on morbidity and mortality.

1634 THE EFFECTS OF SYNBIONIC USE ON MORBIDITY AND MORTALITY IN PREMATURE INFANTS: A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL

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Background and Aim It is previously claimed that probiotic and prebiotic use in premature infants prevents pathogenic bacterial colonization in the intestine and reduces morbidity and mortality. In this study, the effect of synbiotic (probiotic+prebiotic) use on morbidity and mortality in very low birth weight (VLBW) infants is evaluated.

Methods Thirty-four VLBW infants were randomly assigned to receive either synbiotic [probiotic: *Bifidobacterium lactis*, 5x10 colony forming unit, 30mg + prebiotic: Chicory inulin, 900 mg (1 sachet/day Maflor®, Cidex), n=17] (Group-1) or placebo (n=17) (Group-2) from the first enteral feeding and throughout the hospitalization period.

Results There was no significant difference regarding the sociodemographic features between groups. The time interval to reach enteral nutrition to 50 cc/kg/day was similar in both groups, whereas it took shorter time in Group-1 to reach 100/cc/day ($p=0.02$). Increased gastric residual (former feeding >50%) occurred less in Group-1 ($p=0.002$). There was no significant difference between groups in the rate of early clinical or culture proven sepsis, however late clinical sepsis rate and late culture proven sepsis in Group-1 was significantly lower ($p=0.001$, $p=0.04$). Synbiotic use reduced the risk of sepsis independently from gestational age and gender ($p=0.03$). Necrotizing enterocolitis (stage ≥ 2) was significantly higher in Group-2 ($p=0.001$). The rate of bronchopulmonary dysplasia (BPD) and retinopathy of prematurity (ROP) were lower in Group-1 ($p=0.04$, $p=0.03$). No difference was identified regarding mortality, actual weight during hospitalization and discharge between groups.

Conclusion Introduction of synbiotics with the first enteral feeding can help to reduce feeding intolerance and morbidity in VLBW infants.

1635 ARE WE ON THE CORRECT FREQUENCY WITH EXTREME PREMATURE BABIES? AUDIT ON VANCOMYCIN DOSE INTERVALS

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