

T3, T4 were measured. Base on public health data and profiles, total number of newborns, gestational age, method of delivery, birth season and birth weight in whole population and for each of CH patients in addition of these data, their TSH measurements have been recorded.

Results During 5 years, 119701 neonates were screened and CH was confirmed in 10.8% (221) of the referral cases (prevalence = 1:542). No significant statistical difference was seen between gender, birth season among CH patients and source population. Low birth weight (31% vs 4.9% - p value < 0.01), Postdate delivery (1.4% vs 0.2% - p value < 0.01) and macrosomia (were more prevalent in CH. Odds of congenital hypothyroidism in a post-date delivery was 6.9 times of a term delivery. In low birth weight neonates odds of CH was 3.2 times of normal birth weight. Rate of NVD were higher in CH patients rather than source population (39.2% vs 29.2% - p value = 0.01).

Conclusion LBW, postdate delivery and macrosomia are risk factors of congenital hypothyroidism.

1547 CAN WE COMPARE INDICATORS OF IODINE DEFICIENCY DISORDER IN NEONATE WITH SCHOOL-AGED CHILDREN?

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Objective To compare indicator of IDD in newborns with school age children.

Methods From 2006 to 2010, 119701 newborns were screened by measurement of blood TSH level by heel prick. The neonates who had blood TSH > 5 mu/l were recalled for more evaluation. In addition in same period of time, urine iodine were examined in 1200 school aged children and the severity of IDD were classified by WHO, UNICEF, I CCIDD criteria.

Results Between 2006–2010 a total of 9251, 23529, 27427, 29511, 29983 newborns were screened respectively and about %1/7, %1/4, %2/1, %1/8, %1/9 of screened neonates with TSH level equal or greater than 5 mu/l were recalled for more evaluation. Finally the incidence rate of Congenital hypothyroidism was 1/625. The result of urine iodine level in level in school aged children were 270/2, 200/4, 200/1, 200, 200/2 mcg/l respectively.

Conclusion If the WHO urine iodine criteria for school aged, and children WHO neonate TSH criteria were applied, Guilan province would be classified as having none IDD.

1548 THE EFFECT OF QUALITY IMPROVEMENT INITIATIVES AS MEASURED BY NURSES' PERCEPTIONS IN A DEPARTMENT OF CHILDREN AND ADOLESCENTS

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Introduction In the context of a medium-sized Department of Pediatrics in Norway, a recent increase in the number of eligible patients including critically ill ones, has called for changes in the way clinical staff assesses and communicates around children in danger of clinical deterioration.

Aim We developed an educational plan for better recognition of and communication around critically ill children. The aim of the study was to investigate the methods nurses use in detecting clinical deterioration in a child, as well as their conceptions about communication prior to and one year after implementation of educational

activities focused on the airways-breathing-circulation-disability-exposure (ABCDE)-algorithm and of the identify-situation-background-assessment-recommendation (ISBAR) communication tool (later referred to as “intervention”).

Methodology The answers to two open-ended questions about nurses' pre-conceptions about assessment and communication, respectively from 66 nurses pre-intervention; and 48 nurses one year after intervention were analysed by content analysis.

Results Approximately half of the nurses reported to use the ABCDE-algorithm both prior to and after structured courses in this way of making assessments. Nurses often experience problems with communicating their concerns about deteriorating children to the physicians. Only 15% of nurses reported that this had improved after intervention. The fraction of nurses reporting concerns about communication was 29.5% pre- and 31.3% post-intervention.

Conclusion Despite efforts to make clinical staff assess and communicate more structured and similar, we could not prove an effect in our questionnaires. This may indicate that even harder and intensified actions including interprofessional ones over a longer time span are needed.

1549 SUN RELATED KNOWLEDGE AND ATTITUDES IN PRIMARY STUDENTS IN GREECE

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Background Childhood exposure to ultraviolet light increases the skin of skin cancer including melanoma.

Aim The aim of this study was to describe the sun-related knowledge and attitudes of primary schoolchildren in an urban area of Greece.

Methods A randomly selected sample of 2163 students (8–12 years old) from primary schools in an urban area of Greece was surveyed regarding their sun-related, knowledge and attitudes. SPSS 17.0 software was used for analysis with an alpha level set at p ≤ 0.05.

Results 72% of the children were living in coastal urban areas and 15.8% didn't have Greek citizenship. General knowledge level of the students was satisfactory, 3.0 (±0.9), but only a small percentage (27.1%) knew about efficient sun protection factor. Approximately 50% of children reported that they wore a hat and 72% used sunscreen to prevent themselves from getting sunburnt. Children who lived near the sea had a better behaviour to sun protection activities but older students had worse attitudes than elder ones and they had more sunburns too. Also, Greek children had better attitudes against other ethnicities. 31% of the pupils referred at least one sunburn at the last summer. In correlations, girls have more careful behaviour from boys and those children who do not use frequently sunscreen reported sunburn more often.

Conclusions Pupils of all ages need encouragement to protect their skin, to use sunscreens correctly and be aware of alternative sun-protection methods. Future health education needs to make pupils, parents and school staff aware sun exposure is not innocent.

1550 PHOTOTHERAPY AND DNA CHANGES IN FULL TERM NEONATES WITH HYPERBILIRUBINEMIA

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Background Oxidative effects of phototherapy on cell membranes and cell components may have a wide range of potential adverse effects, including DNA damage. Apoptosis is an indispensable mechanism for maintaining many cellular functions, including cell replication, and removal of damaged cells with high burden of genetic mutations. Many genes function as apoptosis regulatory genes. Examples of these genes include the BCL2 gene which is an anti-apoptotic oncogene, and the BAX gene which acts as a promoter of apoptosis.

Objectives Assess the effect(s) of phototherapy on DNA and on rate of apoptosis in full term neonates with hyperbilirubinemia. It comprised 35 neonates with indirect hyperbilirubinemia who received phototherapy for 48 hours, and 20 apparently healthy full term neonates with normal serum bilirubin level, as a control group. DNA damage was assessed by DNA fragmentation and micronucleus assay. Determination of the anti-apoptotic, (BCL2) protein, and Bax gene expression status.

Results The frequency of micronuclei in circulating lymphocytes of neonates who received phototherapy has significantly increased before and after phototherapy compared to controls. DNA fragmentation in circulating lymphocytes, was significantly higher among cases before and after phototherapy compared to controls. The plasma BCL2 protein was significantly lower in the cases before and after phototherapy compared to controls. and Bax gene expression was significantly high among cases before and after phototherapy compared to controls.

Conclusions Phototherapy induces more DNA damage and enhances apoptosis of exposed cells, probably through down regulation of BCL2 expression and upregulation of bax gene expression in neonates with hyperbilirubinemia.

1551 IMPROVING SAFETY OF VASCULAR CATHETER INSERTION IN HIGH-RISK NEWBORNS THROUGH STANDARDIZED TEACHING

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Background Umbilical and percutaneous central catheter placement in high-risk newborns are common NICU procedures with high complication rates, particularly when inserter experience varies. We developed, implemented and evaluated a standardized catheter insertion training program for NICU clinicians to improve patient safety.

Methods Seventy-one clinicians were surveyed to assess learning needs. Using the results, a program that included a manual, didactic seminars, self-study electronic module, pocket cards and low-fidelity simulation for practice and feedback was developed. Effectiveness was assessed with pre- and post-training multiple choice knowledge tests and Xray quiz focused on recognition and management of catheter malposition, plus a post-training simulation performance test. Malposition of catheters inserted in the NICU was the primary outcome.

Results Real-life practice and simulation were the highest rated teaching methods. Seventy-six clinicians completed at least one program component over 3 months. Post-training knowledge scores (65±11% vs 85±9%, n=65, mean±sd) and Xray scores (59±13% vs 69±16%, n=60) improved significantly compared to pre-training (p<0.01). Performance checklist score was 88±8%. Learner satisfaction was high. Catheter malposition rate decreased from 56% (n=292) to 36% (n=374) (p>0.05).

Conclusions A standardized training program resulted in improved knowledge and recognition of catheter malposition but not a significant decrease in malposition rate in the NICU.

1552 IMPROVING CONTROL OF THE OXYGEN SATURATION DURING RESUSCITATION OF PRETERM INFANTS WITH THE USE OF TREND MONITORING

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Background The European Resuscitation Council (ERC) guidelines prescribe oxygen saturation (SpO₂) targets for the first 10 minutes of resuscitation after birth. Unfortunately, the control of SpO₂ in newborn infants is difficult.

Objectives To determine whether a device that displays trend lines, reduced deviation from SpO₂ targets during resuscitation of very preterm infants after birth.

Methods In a single-centre study, deviation from the SpO₂ targets during resuscitation of preterm infants (gestational age (GA) ≤30 weeks) with the aid of a newly developed graphical interface, displaying the trends of SpO₂, fraction of inspired oxygen (FiO₂), was compared with current clinical practice. Data presented as median (IQR).

Results Ten infants (GA 27⁴/₇ (25–28⁵/₇) weeks, birth weight (BW) 812g (694–1068g)) were resuscitated using the graphical interface and 42 infants (GA 27⁵/₇ (25⁶/₇–29¹/₇) weeks, BW 930g (760–1148g)) were included in the control group. We found that infants resuscitated with the graphical interface spend less time above the SpO₂ targets (18% (4–24%) vs. 26% (13–42%)), and had a smaller deviation during the time spend above the SpO₂ targets (2.3%SpO₂ (1.2–3.8%SpO₂) vs. 3.8%SpO₂ (2.5–6.3%SpO₂)). Both time spend below the SpO₂ targets (29% (21–39%) vs. 24% (14–34%)), and deviation below the target (10.5%SpO₂ (8.3–25.9%SpO₂) vs. 7.1%SpO₂ (1.9–11.7%SpO₂)) increased.

Conclusion The use of a graphical interface decreased high SpO₂ levels during the resuscitation of preterm infants. However, both time spend and deviation below the SpO₂ targets increased. It appears the current ERC guidelines are interpreted as the maximum acceptable SpO₂, a target range would clarify the acceptable deviation.

1553 THE RISK OF RE-OCCURRENCE OF CANCER TUMORS IN CHILDREN POST DIAGNOSIS AND TREATMENT

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Background It is very imminent that the tissues of infants are immature thereby increasing the risk of re-occurrence of tumours after surviving cancer.

Methods This study was conducted for 6 years amongst 400 children who had earlier survived cancer and treated between 2005–2011 at the University of Ibadan Teaching Hospital (Paediatric ward). They were evaluated for re-occurrence of tumours.

Results The findings were that 5 re-occurrences were noticed in 6 of the children in a median time of 6 years. The 5 second malignancies were: 1 acute myeloblastic leukemia (AML), 2 breast cancers and 2 sarcomas. The primary diagnosis were Ewing's sarcoma, osteosarcoma, non-Hodgkin's lymphoma and neuroblastoma. Two of these children had received multiple therapies for recurrences. A Ewing sarcoma patient developed sarcoma after 4 years, an osteosarcoma patient developed breast cancer after 4 years, an ALL patient developed Ewing sarcoma after 3 years, a mesenchymal chondrosarcoma patient developed breast cancer and osteosarcoma. A soft tissue sarcoma, and an osteosarcoma developed in two bilateral retinoblastoma patients, a sarcoma developed in a rhabdomyosarcoma patient after 6 years and in a patient treated for nasopharyngeal carcinoma after 3.5 years all in the radiation field.