210 MANAGEMENT OF PATIENTS WITH CONGENITAL TOXOPLASMA INFECTION FROM 1 TO 18 YEARS OF AGE

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At the age of 1 year congenital toxoplasmosis presents a wide spectrum of clinical signs ranging from patent neurological abnormalities to sub clinical infection. At this age treatment is usually discontinued as only cyst stage of parasites are present on which the currently used drugs are inefficient.

Patients with severe lesion, mainly hydrocephalus associated or not to visual impairment usually born from women who were not screened during pregnancy have to be placed in institution or have to be enrolled in special care programs.

Children treated ante and perinatally displayed a totally different presentation. In this setting gross abnormalities are very rare. In a cohort of 480 congenitally infected newborns we observed 5 hydrocephalus. Retinochoroiditis were observed in 8 cases. Ocular lesions are generally diagnosed later in life either because lesions are peripheral or because they occurred later, even after the age of 10. Occurrences or relapses are usually unpredictable but age (6 and 11 years) or pregnancy appear to be periods of risk.

In such clinical settings congenital toxoplasmosis should be considered as a chronic ophthalmologic disease. Whether these patients should be regularly followed is debatable but for counselling pregnant women who seek for information about the long term outcome in their infants such systematic follow up is the only way for providing unbiased information. In a cohort of congenitally infected adults yearly checked since childhood, visual function and quality of life scored well and majority of participant endorsed long term ophthalmologic follow up.

211 OUTCOME OF CONGENITAL TOXOPLASMA INFECTION IN YOUNG ADULTS

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Background Ocular lesions represent the most frequently encountered clinical manifestation of congenital toxoplasmosis (CT). Thus they may be correlated with disease activity, functional damage and impact on quality of life (QoL).

Patients The Department of Parasitology, Hôpital de la Croix-Rousse, Lyon, France, represents a national reference centre for patients with CT. Beyond a European cohort of 430 children with treated CT, 130 presented retinochoroiditis (OT) during a median follow up period of more 10 years.

Results In our European cohort, OT was present at birth in only 10% of instances, but late manifestation beyond ten years of age has to be expected. After 6 years, 24% will manifest OT, increasing to 30% after ten years. Lesions in both eyes have to be expected in 30% of instances, but no child in our cohort had bilateral visual impairment. Not surprisingly, QoL assessment revealed that treated CT has little effect on the vision related QoL and general well being of the affected individuals. This strongly contrasts to outcomes reported from Southern American cohorts with CT where 80% of the merely untreated neonates show ocular manifestations early in life, 65% present bilateral lesions, and foveal involvement is present in 50%, resulting in significantly lower QoL scores.

Conclusions People with OT in Europe show less severe clinical courses and functional damage resulting in better vision-related QoL than individuals living in Southern America, especially since these

frequently have bilateral lesions and more recurrences. Close clinical follow up is warranted in any case with ocular involvement.

212 MECHANICAL SUPPORT IN PEDIATRICS

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ECMO is the implementation of the cardio-pulmonary bypass machine for prolonged periods of time to sustain systemic perfusion and gas exchange. This is an invaluable tool in the care of children with severe refractory cardio-circulatory and pulmonary failure, preferably in patients with potentially treatable and reversible cardiac disease. Development of the ECMO principles, although still not fully supported by evidence-based data, has allowed to progress from a salvage therapy to a more commonly used treatment to allow time for cardio-pulmonary recovery. Therefore, timely initiation of ECMO may impact prognosis. This has been the driving force followed by some centers that have continually available rapid sequence ECMO programs. Nevertheless, selection of the "appropriate" patients for ECMO remains a challenge, is continuously evolving and very institution-dependent. The principle of starting ECMO after failure of maximal medical therapy may be counterproductive. Decision to initiate ECMO in a cardiac patient, particularly after surgery often follows the instinctive judgment of the team. Literature suggests that early initiation of mechanical support in this patient population has been related to better outcomes and better hospital survival. Tendency to initiate ECMO in the early postoperative period or early throughout decompensation seeks to maintain adequate perfusion, to minimize ongoing myocardial insult and to enhance myocardial recovery. The latter may help create a favorable environment for myocardial recovery. Justification for ECMO initiation ought to be based on the patient's lack of capacity to properly perfuse his tissues; hence the need to identify and use early markers of tissue perfusion anomalies.

213 PREVENTING PREMATURETY: USING HUMAN GENOMICS TO UNDERSTAND BIRTH TIMING

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The composition of the biological clock defining the duration of human pregnancy remains a central question in reproductive biology. Our goal is to understand the molecular signals comprising this biological clock to prevent preterm birth. We have generated and analyzed mice with defects in prostaglandin biosynthesis, prostaglandin catabolism, circadian clock molecules, and oxytocin production in efforts to begin to define the key physiological pathways. These genetic studies in mice reveal essential functions for cyclooxygenase-1-generated prostaglandin F2 alpha for labor onset and the degrading enzyme hydroxyprostaglandin dehydrogenase in the maintenance of pregnancy. While these studies have elucidated the pathway for parturition timing in rodents, the findings have resulted in limited understanding for mechanisms of human parturition. In this presentation, data that genetic factors contribute to human preterm birth will be summarized. We have analyzed DNA from families with recurrent preterm birth and control families without preterm infants through genome-wide association and whole exome sequencing. These efforts have identified potentially interesting new contributors to birth timing from the maternal genome, such as the follicle stimulating hormone receptor gene, novel phospholipase isoforms, and pathways harboring rare, predicted deleterious mutations. New data regarding contributors to birth timing from the fetal genome will also be discussed.

214 ERRORS IN MEDICATION PRESCRIPTIONS IN PAEDIATRIC INTENSIVE CARE PATIENTS

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Background and aims Prescribing errors frequently occur in paediatric medicine, especially in paediatric intensive care units (PICUs). Computerized physician order entry (CPOE) systems may help to prevent these errors. This study examined the frequency, nature and determinants of prescribing errors in electronic and handwritten prescriptions in a PICU population.

Methods All prescriptions (electronic and handwritten) for children aged 0–18 years hospitalized in a 14-bed PICU of a university medical center, The Netherlands, from February 2008 - December 2010, were prospectively collected and checked for prescribing errors and determinants (prescription-, patient- and medication-related) thereof.

Results 23,207 prescriptions for 659 patients were collected, of which 14,887 (64%) were handwritten and 8,312 (36%) electronically ordered. 6% of the prescriptions contained a therapeutic error and 54% was administratively incomplete (1–7 missing items per prescription). Electronically ordered prescriptions contained significantly less therapeutic and administrative errors than handwritten prescriptions ($p<0.001$), mainly due to better legibility and completeness. More than 10% of the prescribed doses was outside the therapeutic range of the Dutch paediatric drug formulary. Important determinants of prescribing errors were handwritten prescriptions (OR=3.1 [2.9–3.3]), intravenous medication (OR=2.9 [2.6–3.3]), the youngest of age (up to 1 month OR=1.2 [1.1–1.4]) and drugs affecting the musculo-skeletal system (OR=3.4 [2.9–3.9]).

Conclusions PICU prescribing errors occur frequently. CPOE systems reduce error rates but do not fully prevent these. Data to support what is exactly needed to build better prescribing systems for PICU patients are scarce. This study provides information for improvements in electronic prescribing for PICU patients.

215 THE ACCURACY IN INTERPRETING THE PAEDIATRIC ELECTROCARDIOGRAM AND THE NEED FOR FURTHER TRAINING

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Background and aims Accurate interpretation of the paediatric ECG is of great clinical significance and safety in managing unwell children. Paediatric trainees are assumed adequate knowledge in interpreting ECGs but there are limited studies demonstrating this.

Methods In an online survey-based questionnaire, participants interpreted 10 common clinical conditions with recognisable ECGs, including a normal paediatric and neonatal ECG. A brief educational page followed, then 10 different post-test ECGs on the same conditions. Brief demographics were collected on participant's grade and previous ECG training.

Results 764(n) participants accessed the online survey. Trainees completing only the first 10 ECGs we described as the '10-test', and those completing the full survey with 10-test and 10-post-test ECGs after reading our educational material, as the '20-test'.

Abstract 215 Table 1

Sub-Group	Total Participants	10-test (score)	10-test (n)	20-test Pre-test (score)	20-test Post-test (score)	20-test (n)
ST 1–3	n=195, 25.6%	60.5%	137	63.7%	77.0%	92
ST 4–6	n=137, 17.9%	65.1%	92	69.2%	71.2%	65
ST 7–8 & Consultants	n=185, 24.2%	68.0%	130	69.8%	74.4%	92
Others - includes ED/Anaesthetics/ANPs/GP	n=247, 32.3%	61.5%	155	58.1%	69.3%	103
TOTAL	n = 764	61.0%	514	65.6%	73.0%	352

Conclusions Our study is the largest of its kind assessing ECG interpretation in UK Paediatric practice. Only 27.9% participants had previous formal training, with training and our educational material reflecting improvements by upto 13%. Without routine access to ECG interpretation by tertiary cardiology centres, more formal training needs incorporating into the UK Paediatric training program to accurately identify significant ECG anomalies, inform clinical decisions and optimise patient safety.

216 MEDICATION ERRORS IN PAEDIATRICS: PATIENT, PILL AND PROCESS

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Background and aims Medication errors, defined as preventable events that may lead to incorrect medication use or patient harm, is a big problem in healthcare. Especially children are considered to be at high risk of experiencing harm due to medication errors. Interventions to prevent errors have led to limited improvements. If, however, we could identify error prone situations, more effective interventions could be developed and thereby prevent patient harm. The purpose of this study was to establish the prevalence of harm due to medication errors categorized in characteristics of Patients and Pills in all phases of the medication Process.

Methods We investigated medication errors using a multifaceted approach including direct observations, and review of patients' files, pharmacy logs and voluntary incidents reports. All medication errors were classified in terms of (potential) patient harm.

Results We collected data of 426 patients admitted to five paediatric, non-ICU wards during three months. In 236 patients at least one medication error was identified: 55% (236/426). A total of 39 errors were harmful affecting 37 patients: 9% (37/426).

Significantly more harmful medication errors were found in patients after surgery: 68% (25/37).

In 59% (23/39) of the ADEs analgesics were involved: non-opioids 49% (19/39) and opioids 10% (4/39). Prescribing and administering were the most error prone activities: 28% (11/39) and 62% (24/39).

Conclusions Our results identified error prone Patients, Pills and medication Process. This will guide future targeted interventions to improve medication safety for children.

217 ACCEPTANCE AND PREFERENCE OF FOUR ORAL DOSAGE FORMS IN INFANTS AND PRE-SCHOOL CHILDREN IN THE NETHERLANDS

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