

4. Ability to perform needle thoracocentesis for management of pneumothorax

These factors are especially important out of hours, when Consultants are non-resident. The aim of this project is to establish the current level of knowledge and skill set of ST4/5 trainees in the South West region. This information was acquired as part of the process to set up advanced neonatal simulation training within the region.

Methods A 10 questions survey was sent to the ST4/5 paediatric trainees in the South West region. To improve number of responses, the survey was sent through the respective deaneries and posted on the region's paediatric social media page. The survey was carried out for a period of 45 days (October to November 2014).

Results Responses were obtained from 12 trainees (ST4:7, ST5:5) and the key results are listed below:

1. Confidence in mechanical ventilation strategies: Only 41% of trainees stated that they were confident, with the rest either having confidence only with Consultant support or not confident.
2. 50% of trainees have intubated < 5 term or preterm babies without supervision.
3. 83% of trainees have never performed emergency needle thoracocentesis independently.
4. 91% of trainees have never led an advanced resuscitation leading to withdrawal of care on the resuscitaire.
5. 100% of trainees agreed that simulation training on advanced neonatal emergencies would add value to their skills and knowledge.

Conclusion New paediatric registrars are expected to be competent in advanced neonatal emergencies and procedures. Despite this, a high proportions in the survey lack experience and confidence in independent management and procedural skills for such scenarios. Training through neonatal simulation is vital to address these training needs.

G140(P) ABSTRACT WITHDRAWN

G141(P) MONITORING RESPIRATORY FUNCTION PARAMETERS IN VENTILATED INFANTS DURING INTER-HOSPITAL EMERGENCY NEONATAL TRANSPORT

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Introduction Volume targeted ventilation (VTV) has been shown to decrease the incidence of hypocarbia, air leaks, bronchopulmonary dysplasia (BPD), intraventricular haemorrhage (IVH) and periventricular leukomalacia (PVL). As a result it has now become the predominant mode of ventilation in the NICU. Within the setting of a UK neonatal transport service, ventilation is more commonly non-triggered pressure limited and time cycled. End tidal Carbondioxide (ETCO) monitoring is used as a surrogate marker of ventilation and minute volume and has demonstrable effectiveness. There is a paucity of data however evaluating the use of additional respiratory function parameters, particularly tidal volume and tube leak during inter-hospital emergency neonatal transport.

Aim We aimed to assess current use of supplementary respiratory function monitoring within a UK neonatal transport setting.

Methods We carried out a telephonic survey of all UK neonatal transport teams to ascertain current practice with regards to monitoring of the following respiratory function parameters in ventilated infants during emergency neonatal transport: PIP, PEEP, MAP, minute volumes, flow, tidal volumes, ETCO and leaks around the ETT. Method of carbon dioxide monitoring was also recorded.

Results 21/22 (95%) of UK neonatal transport teams responded to the survey. Currently, during inter-hospital neonatal transport, 9/21(42%) teams monitor tidal volumes and 8/21(38%) teams monitor delivered airway pressures, flow, minute volumes and leaks around ETT. 18/21(85%) teams use ETCO monitoring. Of these, 14/18(77%) use side stream/micro stream and 4/18(23%) use mainstream ETCO monitoring.

Conclusions Our survey shows that currently, mechanical ventilation is mainly assessed using heart rate, respiratory rate, oxygen saturations, blood gas, chest rise, auscultation and ETCO monitoring. Hypocapnia is a well-known complication of mechanical ventilation and rates vary significantly between UK neonatal transport teams. Although the vast majority of teams use ETCO monitoring only 40% of services are using a measure of tidal volume. Continuous monitoring of ventilator parameters in an emergency situation and assessment of minute ventilation would allow clinicians to evaluate changes in pulmonary mechanics allowing short-term modifications, potential reductions in key outcome measures such as hypocarbia and possible reduction in medium to long-term adverse respiratory outcomes. Further studies of the potential benefits of enhanced monitoring are required in this high-risk area.

G142(P) ARE ANTIBIOTICS ADMINISTERED WITHIN ONE HOUR IN SUSPECTED NEONATAL SEPSIS AS PER NICE GUIDELINES?

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Early-onset neonatal bacterial infection is a significant cause of mortality and morbidity in newborn babies. NICE recommends that if a neonate requires antibiotic treatment should be given as soon as possible, and always within 1 h of the decision to treat.¹

Aim To quantify the time between decision to start antibiotics and its administration to the neonate.

Method Retrospective study over 6 weeks of all neonates admitted to postnatal ward for intravenous antibiotics.

Results Total of 24 neonatal notes was reviewed on the postnatal ward. In three cases patient records and/or documentation missing. Total of 21 cases data were analysed.

The common indications for antibiotics were prolonged rupture of membranes, respiratory distress and maternal fever.

Time between decision to treat and administration

Time in minutes	Number	Percentage
0-60	1	5%
61-120	10	47%
121-180	7	33%
181-240	2	10%
241-300	1	5%

Only in 5% of cases were antibiotics administered within 1 h of the decision making, in 47% of cases it took 1-2 h. Only in

33% of cases antibiotics were prescribed within one hour of decision making. In 95% of cases antibiotics was administered within one hour of prescription.

Conclusion Administration of antibiotics within one hour of decision making proved difficult. Thought that most delay arises during transfer for cannulation, prescription of antibiotics was also delayed and therefore administration. Further exploration of this delay and appropriate resolutions will improve administration times of antibiotics and therefore treatment outcomes in suspected neonatal infection.

REFERENCE

- 1 National Institute for Health and Care Excellence. *Antibiotics for Early-onset Neonatal Infection*. [CG149]. London: National Institute for Health and Care Excellence; 2012

G143(P) CEREBRAL FUNCTION MONITORING (CFM) AS A PROGNOSTIC BEDSIDE TOOL

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Background and aims CFM is routinely used for monitoring babies undergoing Therapeutic Hypothermia. There is limited evidence linking the relationship of the change in the CFM trace during cooling to Mortality or HIE changes on MRI. We aim to assess any such link.

Results Study period 5 years (Sept 09–Aug14). Total number 76 CFM and MRI CFM trace was persistently severely abnormal at the end of the cooling period in (19/76 = 25%). In this group 47% died, 47% had HIE changes on MRI and one baby (6%) had normal MRI. However in babies where CFM normalised at end of cooling (35/76 = 46%), there was no mortality. MRI scans were normal in 43% and 37% had HIE changes on MRI.

MRI In mortality group (n = 15), 11 babies died before undertaking MRI. HIE changes were found in 4 babies (100%) who had MRI. In the survivor group, MRI was performed in 98%. Scans showed HIE changes in 50% and 35% were normal.

Conclusion Analysis that persisting severely abnormal CFM tracing at the end of cooling is indicative of high probability of mortality and/or HIE changes on MRI. Although normalisation of CFM pattern is not associated with any mortality from our data, it does not preclude the HIE changes on MRI. We believe that CFM is a helpful bedside diagnostic tool for assessing extent of hypoxic brain injury and it helps in counselling parents

G144(P) HYPOXIC ISCHAEMIC ENCEPHALOPATHY IN TRANSPORT: HOW HAS THE INTRODUCTION OF COOLING AND END TIDAL CO₂ MONITORING AFFECTED OUR PATIENTS?

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Background Hypoxic Ischaemic Encephalopathy (HIE) occurs in 1/500 babies and can lead to cerebral palsy. Treatment focuses on preventing secondary brain injury. Early cooling and strict CO₂ control may have a positive effect on neurodevelopmental outcome. Optimal management of babies born outside of tertiary units during retrieval could improve their outcome.

		Mortality Group (%)	Survival group (%)
CFM at start of			
Cooling	N = 76	15(20%)	61(80%)
	Severely abnormal	15(80%)	33(54%)
	Moderately abnormal	12(20%)	21(34%)
	Normal	0	7(12%)
CFM progression			
during cooling	N = 74	15	59*(2ECMOtransfer)
	Severe to Severe	11(92%)	8(26%)
	Severe to Moderate	1(8%)	8(26%)
	Severe to Normal	0	15(48%)
	Moderate to Severe	2(67%)	0
	Moderate to Moderate	1(33%)	4(19%)
	Moderate to Normal	0	17(81%)
	Normal to Severe	0	2(29%)
	Normal to Moderate	0	2(29%)
	Normal to Normal	0	3(42%)

Method Single centre cohort study of referrals for tertiary care with HIE 1996–2013. Using the transport database and retrieval documentation we reviewed CO₂ on departure from the referring unit and arrival at the tertiary unit before and after the introduction of end tidal CO₂ (ETCO₂) monitoring. We also reviewed temperature on departure and arrival before and after the introduction of cooling as a recognised treatment modality. We ask whether distance travelled affects data.

Results There were 148 referrals for transfer. 52/148 were referred after introduction of cooling. 35% were at the desired temperature (33–34 degrees) at departure from referring unit increasing to 40% on arrival at the tertiary unit. 21/148 were referred after the introduction of ETCO₂ monitoring. Before the introduction of ETCO₂ 25% of babies had a CO₂ in the desired range (5–7 kPa) at departure increasing to 33% on arrival (not all babies had values documented). Following the introduction of ETCO₂ 25% of babies had a CO₂ in the desired range at departure rising to 50% on arrival. Travelling a shorter distance did not inevitably lead to a decreased ability to alter temperature or CO₂ in transit. There was a slight tendency to over-ventilate and babies were more likely to be above the desired temperature during transport.

Conclusion Some units are further away from the tertiary centre. Although cooling as an entity has been adopted by peripheral units there is potential for more aggressive targeting of desired temperature before the transport team arrives and during transfer. ETCO₂ allows us to manage CO₂ better but there is room to be more targeted both by the referring unit and also in transport. The effect cooling equipment in transport would have on our data is yet to be addressed.

G145(P) INDOMETHACIN VS IBUPROFEN TO TREAT PATENT DUCTUS ARTERIOSUS (PDA) IN NEONATES <31 WEEKS GESTATION REDUCED THE INCIDENCE OF NECROTIZING ENTEROCOLITIS (NEC)

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