Abstract G398(P) Table 1 Retrospective review of 197 inpatient sleep studies

	OSA /UARS/ other abnormality diagnosed with additional modalities	Normal study using additional modalities
Normal or borderline oximetry	19	117
Abnormal oximetry	42*	19

*1 child had mixed central/obstructive abnormalities.

A total of 19 children with abnormal oximetry findings were considered to have a normal study with the use of video, sound and PTT. Technical reasons were frequently identified for the abnormal oximetry findings. An identical number of children with normal or borderline oximetry were categorised as having UARS or OSA and were managed with a combination of watchful waiting, surgery or medical treatment.

Conclusion Screening sleep studies incorporating video, sound and arousal detection provide increased diagnostic accuracy over oximetry only studies. These studies may be of particular benefit in a DGH setting with no access to polysomnography.

REFERENCES

- 1 Brouillette RT, Morielli A, Leimanis A, *et al.* Nocturnal pulse oximetry as an abbreviated testing modality for pediatric obstructive sleep apnea. *Pediatrics* 2000;**105**:405–412
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G399(P) USEFULNESS OF PULSE TRANSIT TIME IN THE ASSESSMENT OF CHILDREN WITH OBSTRUCTIVE SLEEP APNOEA

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Aims Pulse oximetry is widely used to identify children with OSA but lacks sensitivity compared to polysomnography. Previous studies have shown the utility of pulse transit time (PTT) at detecting arousals in children with OSA but values likely to be

indicative of disease have not been established.¹ PTT is the time taken for the pulse pressure wave to travel from the aortic valve to the periphery and is a non-invasive marker of blood pressure. It provides a quantitative measurement of inspiratory effort in patients with sleep-related breathing disorders. We aim to investigate if a correlation exists between PTT indices (PTT arousals, respiratory swing) and oximetry results to ascertain its usefulness or otherwise in the assessment of children with suspected OSA.

Methods A retrospective review was carried out of 176 paediatric inpatient sleep studies undertaken at a district general hospital between Dec 2013–Dec 2014. Data were obtained from a database and patient notes. Sleep studies were carried out using VISILAB equipment incorporating ECG, audio, video, PTT and oximetry. Statistical analysis was performed using an unpaired, 1-tailed students t test.

Results Our data showed an upward trend in average PTT arousals when OSA severity was determined using pulse oximetry or by sleep study based diagnosis. Positive studies had an average PTT over 49/hour (Figures 1 and 3). This upward trend is also the case for respiratory swing (Figure 2), with positive studies having a mean respiratory swing over 24 ms. There is a highly significant difference in mean PTT and respiratory swing

Abstract G399(P) Figure 1 Mean pulse transit time arousals for each oximetry outcome category of sleep study (error bars show standard deviation)

Abstract G399(P) Figure 2 Mean respiratory swing for each oximetry outcome category of sleep study (error bars show standard deviation)

Abstract G399(P) Figure 3 Mean pulse transit time arousals for each outcome category of sleep study (error bars show standard deviation)

between normal/borderline and abnormal oximetry categories ($p = < 0.005$ for both) and between normal (including primary snoring) and abnormal sleep study categories ($p = < 0.005$ for both). However, the trends are not discriminatory enough to be used as stand-alone measurements of degree of OSA as there is significant overlap between the categories (p values = > 0.05).

Conclusion PTT is not sufficiently discriminatory if used in isolation for assessment of OSA in children, but is a useful addition when combined with pulse oximetry and other parameters.

REFERENCE

- 1 Katz ES, Lutz J, Black C, Marcus CL. Pulse transit time as a measure of arousal and respiratory effort in children with sleep-disordered breathing. *Pediatr Res*. 2003;53:580–588

G400(P)

HOW USEFUL IS RECORDING PREFERRED PLACE OF END OF LIFE CARE AND PLACE OF DEATH AS OUTCOME MEASURE IN PAEDIATRIC PALLIATIVE CARE?

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Aims To evaluate the preferred place for end of life care and place of death as an outcome measure in paediatric palliative care

Methods Medical records of children dying under the care of the Paediatric Palliative Care team from January 2009 to December 2013 were audited.

Results 187 deaths were identified: mean 37.5 deaths per year. Deaths per year increased over the 5 year period ($p > 0.05$). 53% of deaths were in the 0–4 years age range and 5% were over 18 years. 58% of deaths were non oncology palliative care, 38% oncology palliative care and 5% oncology on active treatment. Oncology deaths on active treatment increased over the 5 year period ($p > 0.05$). Preferred place for end of life care was recorded in 77% children dying during palliative care. 57% oncology and 33% non oncology patients identified home as their preferred setting for end of life care. 25% non oncology and 12% oncology patients identified hospice as their preferred place of care. Increasing numbers of non oncology families chose

home and oncology families chose hospice over the 5 year period. Overall 92% children died in their preferred setting for end of life care. The number of rapid discharges required to achieve preferred place for end of life care increased ($p < 0.05$). Ten children did not die in the preferred setting for end of life care. In 3 cases the palliative care team was not aware that the patients had been admitted to hospital until after the child had died, three rapid discharges were abandoned due to rapid deterioration. Four children died suddenly. When statistics were broken down by quarter the small numbers of deaths overall resulted in large but not statistically significant swings in the percentage of children achieving death in the preferred setting for end of life care.

Conclusions Recording of preferred setting for end of life care and death in the setting of choice for end of life care is achievable. Small numbers of patients, result in large but not statistically significant swings by quarter. This measure is not appropriate for intervals of less than a year.

UK Children's Cancer and Leukaemia Group and British Paediatric Haematology Society

G401

LONGITUDINAL ASSESSMENT OF LUNG FUNCTION IN CHILDREN WITH SICKLE CELL DISEASE

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Aims To prospectively undertake longitudinal assessment of lung function in children with sickle cell disease (SCD) and similar aged and ethnic matched controls. Our aim was to test the hypotheses that lung function in SCD children, but not controls would deteriorate with increasing age and the rate of decline would be greater in younger children who are more likely to have suffered acute chest syndrome (ACS) episodes.