

Introduction Congenital lung agenesis is a rare abnormality which has been reported to have an estimated incidence of 1 in 15,000 pregnancies and to carry a poor prognosis, especially when associated with congenital heart anomalies. (1) However, precise incidence data has previously been unavailable and clinical management has improved in recent years with an unknown impact on outcomes.

Methods We used the North of England register of congenital anomalies (NorCAS) cross-referenced with clinical data from our regional paediatric respiratory centre to calculate the first known accurate incidence estimate for this condition. Detailed clinical and outcome data were then collected with informed consent from the families of affected infants.

Results The incidence of lung agenesis was 0.12 per 100,000 live births (95% confidence interval 0.03–0.31). Four cases were identified with a median age at follow-up of 5 years. Lung agenesis was associated with complex congenital heart disease (complete atrioventricular septal defect with left atrial isomerism) in one case, and with aortic coarctation and atrial septal defect in another. Both these patients had their heart defects successfully repaired. The third patient had a normal heart but musculoskeletal problems, while lung agenesis was the only anomaly in the fourth patient. All four patients are well and not on home oxygen.

Conclusions We reviewed the course of the four patients with lung agenesis born in the region between 2004 and 2013, and report that medium term outcomes have been good, even when associated with congenital heart disease and other anomalies. This information will provide a useful starting point when counselling parents whose unborn baby has an antenatal diagnosis of lung agenesis. We aim to follow-up these patients to report long-term outcomes as these remain unknown and there is concern about the potential for the development of late onset pulmonary hypertension.¹

REFERENCE

- Muensterer O, Abellar R, Otterburn D, *et al.* Pulmonary agenesis and associated pulmonary hypertension: A case report and review on variability, therapy, and outcome. *Eur J Pediatr Surg Rep* 2015;**3**:33–9.

From oxygen to the ITU

P187 POTENTIAL IMPACT OF NON-ARTERIAL BLOOD GAS SAMPLING ON CLINICAL PRACTICE

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Introduction Arterial blood gas (ABG) analysis is commonly used to monitor patients with acute respiratory problems but can be painful and associated with potentially serious side-effects. Recently there has been renewed interest in non-arterial forms of blood gas analysis with a suggestion that such techniques could replace >60% of ABGs.¹ It is however difficult to quantify the impact that non-ABG sampling could have as there is little published data on the clinical burden that ABGs represent. We were interested in establishing how many ABGs are routinely done in a real world setting.

Methods We retrospectively analysed acute admissions (all cause) to a ward based level 2 Respiratory Emergency Care Unit (RECU) at a University Teaching Hospital over a 6 month period. Prospectively we analysed visual analogue pain scores (VAS) and complications including attempt rates.

Results Over a 6month period (Apr-Oct) 57 of 111 patients admitted to the RECU had complete datasets. A total of 432 ABGs were obtained from this cohort giving an average of 7.6 ABGs (range 2 – 22) per patient per admission and on average patients had 2.3 ABGs each day whilst on RECU.

Overall the mean number of attempts per ABG of the prospectively collected cohort (n = 100) was 1.6 (range 1 – 8; 44% physician obtained). Taking this into account a patient could therefore expect to be stabbed 3.7 times every day or 11 times in total during their admission through the RECU. The most commonly documented complication amongst our patients was pain but average pain scores were relatively low in keeping with other published data (median VAS = 3, IQR 5); no serious complications were reported.

Conclusions Our data suggests that patients requiring admission to a level 2 respiratory unit experience a high burden of ABG testing during their stay. Using published literature on the potential impact of Non-ABG sampling our data suggests that >500 ABGs could be avoided each year on our acute respiratory unit alone.

REFERENCE

- McKeever T, Hearson G, Housley G, *et al.* Using venous blood gas analysis in the assessment of COPD exacerbations: a prospective cohort study. *Thorax* 2016;**71**(3):210–5.

P188 NASAL HIGH FLOW (NHF) – IS IT APPROPRIATELY PRESCRIBED? A RETROSPECTIVE CASE REVIEW OF 93 ADULT PATIENTS REQUIRING NASAL HIGH FLOW OXYGEN WITHIN A DISTRICT GENERAL HOSPITAL

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Background Nasal high flow (NHF) delivers warmed humidified oxygen up to 65L/min and is commonly used in intensive care units (ICU). In a non-critical care settings it can provide a bridge to ICU for hypoxic patients, and symptom palliation for those unsuitable for escalation.

Evidence to support NHF use in a non-critical care setting is limited. We aimed to review patient selection and clinical outcomes for individuals commenced on NHF over two winter periods, in order to highlight prognostic indicators and develop a clinical guideline.

Method We performed a retrospective review of 93 cases managed with NHF September-December in 2014 and 2015 in a medium sized DGH. Patients were included regardless of diagnosis and treatment escalation plan. Data was collected on patient demographics, diagnosis, management and clinical outcome. Results described as %(n).

Results 93 patients (mean age 71.2 yrs, SD 14.8). Presenting complaint: Pneumonia 57.0% (53), Aspiration pneumonia 4.3% (4), Pulmonary embolism 4.3% (4), Pulmonary oedema 3.2% (3), Interstitial Lung Disease 3.2% (3), other diagnoses 28.0% (26). Clinical indication: Hypoxia 64.5% (60), hypoxia and work of breathing 14.0% (13), work of breathing alone 7.5% (7) and palliation 14.0% (13).

42 patients (45%) were assessed by ICU, of which 21 patients were deemed appropriate [mean age 65 yrs (40–84)]. 62% (13) were intubated. 81% (17) survived to discharge; 5.9% (1) required LTOT. No significant correlation was present between flow rates and mortality (p = 0.7).