Pulmonary arterial hypertension: diagnosis, management and outcomes

**Introduction** Difficult and slow weaning of ventilated patient will have been observed by staff in many critical care units. A National Association for Medical Direction of Respiratory Care (NAMDRC) Consensus Conference suggested that 20% of such patients had neurological disease.

The incidence of respiratory failure following acute cervical spinal cord injury (ASCI) ranges between 22.6% and 57% and the average time to wean from ventilator support was found to be 36 days. Weaning for such patients should therefore take place in an intermediate care facility and be slow paced. Previous data from our unit did suggest a successful wean in about 70% of patients admitted to this regional spinal injury unit. We therefore wanted to review our recent results (Nov 2009 – Nov 2012) with previous standards.

**Methods** We performed a retrospective review of all patients admitted from November 2009 to November 2012 for respiratory weans following spinal cord insult.

**Results** 43 patients (33 male and 8 female) were admitted to the spinal critical care unit for weaning (14.33 patients per year). Average age was 54.7 years for male and 55.4 years for females. The level of injury is illustrated in the table below:

<table>
<thead>
<tr>
<th>Level of Injury</th>
<th>Number</th>
<th>%</th>
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<tbody>
<tr>
<td>C1–3</td>
<td>10</td>
<td>23%</td>
</tr>
<tr>
<td>C4–5</td>
<td>23</td>
<td>54%</td>
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<tr>
<td>&gt;C5</td>
<td>10</td>
<td>23%</td>
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7 of the 10 Level C1–3 injury patients were not weaned or were only partially weaned. The remaining 3 patients of Level C1–3 injury (incomplete) were weaned. 1 patient with Level C6 injury was only partially weaned but was 77 years of age.

**Conclusions** Review of the period from 2009–2012 is very encouraging, suggesting weaning success in line with national and international centres. Further reviews will focus on duration of wean and the effect of co-morbidities and age on the weaning outcome. Further attention needs to focus on quality of life in the weaned and not weaned patient group.

**REFERENCES**

Increased pulmonary vascular resistance, right ventricular failure and death. Survival is strongly linked to functional class with patients persisting in WHO class IV surviving less than one year. Such patients commonly require repeated hospital admissions with intractable symptoms due to right heart failure. Although specialist palliative care involvement is recommended in current guidelines for the management of PAH, no formal recommendations exist presently to guide clinicians on timing of referral.

The aim of this study was to outline current practice in this area and define the potential workload and role of specialist palliative care services.

**Methods** Data was collected retrospectively for all patients within our national PAH service who died over a one year period (June 2013–June 2014). We specifically looked at timing of referral and involvement of palliative care specialists, WHO functional class, clinical course prior to death and prognostic indicators of deterioration.

Suitable patients were identified from the PAH and palliative care databases. Patient notes were reviewed to identify WHO class, clinical course prior to death and documented evidence of specialist palliative care involvement.

**Results**
- 31 patients were identified; (14 male, 17 female; 19 (61%) WHO IV, 9 (29%) WHO III, 3 (10%) WHO II).
- Only 11 (35%) had documented evidence of specialist palliative care involvement.
- 7 (22%) received input whilst in hospital, 4 (13%) in the community.

**Conclusions** The majority of our patients did not receive specialist palliative care support during the final stages of their disease. Whilst the majority (61%) of patients were functional class IV prior to death, 39% were functional class II or III. Progressive deterioration and increased burden of symptoms over time preceding death were commonly noted. Whilst the specialist PAH nurses and clinicians offer palliative care and support, our data suggests that a review of the timing, organisation and documentation of referral to specialist palliative care services requires consideration.

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**THE ROLE OF SPECIALIST PALLIATIVE CARE SERVICES IN THE MANAGEMENT OF PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION: A REVIEW OF CURRENT PRACTICE**


**Introduction and objectives** Pulmonary Arterial Hypertension (PAH) is a severe, progressive condition characterised by
A TWO MONTH PROSPECTIVE STUDY: ARE CTPAS REQUESTED APPROPRIATELY AND IF NOT DO THEY DIAGNOSE ALTERNATIVE PATHOLOGIES?

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Introduction Pulmonary Embolisms (PE) are clinically difficult to diagnose and associated with significant morbidity and mortality. Computerised Tomography Pulmonary Angiogram (CTPA) is routinely used to investigate suspected PE. Clinical concern and the increased availability of CTPA may mean that more patients may be receiving unnecessary tests and anxiety in this vulnerable group of patients.

Conclusions We have identified that an age-adjusted cut-off factor of x10 significantly increased D-dimer specificity in older patients; however the sensitivity of this test was unacceptably compromised. A cut-off factor of x3 maintained sensitivity at 100%; however specificity was only 47.7%.

Results (Table 1) Of the 389 presentations, 229 (58.9%) were from patients aged ≥50 years. 13 (11.5%) patients with positive D-dimers using the conventional cut-off, had VTE as confirmed by imaging tests. The sensitivity of the conventional D-dimer cut-off value was 100% in this older cohort, with a specificity of 53.7%. The age x10-adjusted cut-off improved specificity to 84.7%; however sensitivity was markedly reduced to 76.9%, with 3 patients (23.1%) with non-high clinical probability of VTE missed. Further analysis suggested that an age-adjusted cut-off factor of x3 would maintain sensitivity at 100%; however specificity was only 47.7%.

Alternative diagnoses made on CTPA do not appear to alter management in the majority, suggesting that they should not be used to make other diagnoses. More research is required in diagnosing PE to minimise radiation and contrast risks, and ensure CTPAs are of maximum clinical benefit.

REFERENCE
1 Davies et al, BMJ 2011;342:d947
2 van ES et al, Chest 2013;144(6):1893–9