LONG TERM OUTCOMES FOR PATIENTS WITH PULMONARY ARTERIOVENOUS MALFORMATIONS CONSIDERED FOR LUNG TRANSPLANTATION

**Introduction and objectives** Pulmonary arteriovenous malformations (PAVMs) are abnormal vessels that provide anatomic right-to-left shunts, and frequently result in severe hypoxaemia. Lung transplantation is sometimes considered if PAVMs are not amenable to treatment by embolization or surgical resection. The median oxygen saturation (SaO₂) was 90.75% (range 70–97.5%), with 9 individuals reporting nosebleeds worse when a noseclip was used (66/192 (34.3%, p = 0.0003)). Similarly, migraine headaches (which are more frequent in people with HHT), were reported to be worse after forced expiratory manoeuvres and complications. Current aetiological consensus supports paradoxical emboli from periodontal origin, with preventative dental recommendations published in 2008. Limited knowledge is available to identify specifically at-risk individuals. This study aimed to characterise a cohort from 2005–2016; recognise potential precipitants; and compare results to an earlier published series.

**Methods** With ethical approval, notes of patients newly presenting at a single institution between 2005–2016 were reviewed to collect cohort characteristics. GraphPad Prism was used to calculate descriptive statistics, and to perform Mann-Whitney and Chi-squared statistical tests for comparison between the two cohorts.

**Results** Of 488 new patients with PAVMs, 33 (6.8%) had cerebral abscesses. 21 were female (63.6%), 12 male. The rate corrected for ascertainment bias was 3.8%. The median age at abscess was 46 years (range 13–69). The median oxygen saturation (SaO₂) was 90.75% (range 70–97.5%), with 9 individuals having respiratory symptoms. There were 29 confirmed HHT diagnoses (87.9%). The median largest feeding artery diameter was 5 mm, and for 5 individuals, all feeding arteries had diameter ≤3 mm. In total, 19 (57.6%) had residual PAVMs too small for embolization.

Organisms identified (Table 1) suggest periodontal origin; 16 individuals (48.5%) had poor dental hygiene and 9 (27.3%) had dental events as abscess precipitants. Interestingly, 4 individuals had abscesses whilst on holiday abroad. 5 individuals reported worsening migraines and 2 individuals had increased seizure frequency ≤3 months pre-abscess.

Within the non-overlapping 1999–2005 cohort, there were 28/219 abscesses (12.8%, 9.05% adjusting for ascertainment bias). Compared to the later series, similar proportions of abscesses occurred prior to PAVM diagnosis (18/28 (64.3%) vs. 24/33 (72.3%)).

**Conclusion** The PAVM cohort remains at high risk of cerebral abscess. Scrupulous dental hygiene appears to remain paramount to reduce risk. The worsening migraines and abscess occurrence whilst abroad are unexpected findings recommended for further investigation.