LETTER TO THE EDITOR

Flight-related complications are infrequent in patients with hereditary haemorrhagic telangiectasia/pulmonary arteriovenous malformations, despite low oxygen saturations and anaemia

Individuals with pulmonary arteriovenous malformations (PAVMs) and hereditary haemorrhagic telangiectasia (HHT) commonly have low oxygen saturations and anaemia, two parameters generally used to indicate medical fitness to fly. Using a retrospective questionnaire-based study, the authors examined in-flight complications and predictors in 145 HHT patients (96 with PAVMs) who reported 3950 flights, totalling 18943 flight hours. Dyspnoea and thrombotic complications were less common than expected, and could not be predicted from sea level oxygen saturations or haemoglobin concentrations. Nosebleeds that can bar individuals from boarding a flight occurred in 7.4% (0.86% to 17.2%) of flights. For participants with PAVMs who had not reported in-flight dyspnoea, there was a wide range in arterial oxygen saturation (SaO2) levels (figure 1A). There was no difference in median SaO2 between those who reported in-flight dyspnoea and those who did not (figure 1B). Flights where dyspnoea was reported did not correspond to times when SaO2 were lowest for that particular individual (figure 1C). Similarly, there appeared to be no relationship between dyspnoea and either haemoglobin or serum iron (online supplementary figure 1). There was also no relationship between thrombotic complications and oxygen saturations/haemoglobin (online supplementary figure 2) or between in-flight nosebleeds and basal nosebleeds frequency (if at least once per month) or haemoglobin (online supplementary figure 3).

In conclusion, and as discussed in more detail in the supplementary material, the principal findings of this study were that flying appears safe for the majority of individuals with PAVMs and HHT despite abnormal oxygen saturations and haemoglobin concentrations. With the exception of nosebleeds, complications, when they occurred, were usually self-limiting. It was difficult to predict who will experience complications, with the best predictor appearing to be previous flight experience. The findings are surprising, and raise difficulties in recommendations for in-flight oxygen and prophylaxis of venous thromboemboli.

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Both authors had full access to all of the data in the study, and take responsibility for the integrity of the data and the accuracy of the data analysis.

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Competing interests None.

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Figure 1 Sea level oxygen saturation in 96 participants who flew with pulmonary arteriovenous malformations (PAVMs). (A) Earliest and most recent arterial oxygen saturation (SaO2) values for PAVM patients who did not report in-flight dyspnoea (improvements were the result of PAVM embolisation). (B) Mean erect oxygen saturations (SaO2) at sea level for individuals who reported in-flight dyspnoea and those who did not. Horizontal bars denote medians. There was also no difference in earliest or latest SaO2 (data not shown). (C) Serial SaO2 in participants who reported dyspnoea over periods of 1–17 years (median 7.5). Circles indicate periods in which flights were reported to cause dyspnoea. The flight causing dyspnoea for participant 107 was the only long-haul flight taken by that individual.
Contributors Both authors designed the study and obtained ethical approval. CLS had reviewed the patients. Questionnaires were sent out and responses tabulated by CGM. Both authors obtained further data from primary patient records and analysed the data. The authors co-wrote the manuscript: the table was generated by CGM; figures and statistics by CLS. Both authors approved the final version. CLS is the guarantor of the data.

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