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Ambulatory management of secondary spontaneous pneumothorax: a randomised controlled trial

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Ambulatory management with a flutter valve does not shorten overall length of stay in patients with secondary spontaneous pneumothoraces compared to standard management. This was due to increased risk of treatment failure with ambulatory management. https://bit.ly/2JEd3YC

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ABSTRACT Secondary spontaneous pneumothorax (SSP) is traditionally managed with an intercostal chest tube attached to an underwater seal. We investigated whether use of a one-way flutter valve shortened patients' length of stay (LoS).

This open-label randomised controlled trial enrolled patients presenting with SSP and randomised to either a chest tube and underwater seal (standard care: SC) or ambulatory care (AC) with a flutter valve. The type of flutter valve used depended on whether at randomisation the patient already had a chest tube in place: in those without a chest tube a pleural vent (PV) was used; in those with a chest tube *in situ*, an Atrium Pneumostat (AP) valve was attached. The primary end-point was LoS.

Between March 2017 and March 2020, 41 patients underwent randomisation: 20 to SC and 21 to AC (13=PV, 8=AP). There was no difference in LoS in the first 30 days following treatment intervention: AC (median=6 days, IQR 14.5) and SC (median=6 days, IQR 13.3). In patients treated with PV there was a high rate of early treatment failure (6/13; 46%), compared to patients receiving SC (3/20; 15%) (p=0.11) Patients treated with AP had no (0/8 0%) early treatment failures and a median LoS of 1.5 days (IQR 23.8).

There was no difference in LoS between ambulatory and standard care. Pleural Vents had high rates of treatment failure and should not be used in SSP. Atrium Pneumostats are a safer alternative, with a trend towards lower LoS.