**Hong Kong Neurosurgical Society 28th Annual Scientific Meeting ASM 2021**

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| **Title:**  Oxygen therapy for chronic subdural haematoma after burr-hole drainage? Faster pneumocephalus resorption with post-operative supplemental low-flow normobaric oxygen  **Authors:** (Capitalize the Surname, underline the presenter, list out all the people contributed)  CHAN David Yuen Chung, POON Wai Sang, NG Stephanie Chi Ping, YEUNG Kam Tong, LU Gabriel Yeow Yuen, CHAN Emily Kit Ying, NG Rebecca Yuen Ting, MAK Wai Kit, CHAN Danny Tat Ming, WONG George Kwok Chu  **Institution(s):**  1Division of Neurosurgery, Department of Surgery, Prince of Wales Hospital, The Chinese University of Hong Kong.  **Abstract:** (max 250 words, please check spelling and grammar)  ***Objective*:**  Significant post-operative pneumocephalus was independently associated with chronic subdural haematoma (cSDH) recurrence. Pneumocephalus resorption (PR) rate might be a modifiable factor. This study aimed to evaluate the differences in PR rates in post-operative cSDH in room air versus with supplemental oxygen.  ***Method:***  Consecutive adult cSDH patients with burr-hole drainage from 1st April to 31st December 2020 at Prince of Wales Hospital were reviewed. The primary outcome was the pneumocephalus resorption rate per hour between the first and second post-operative CT scan in cSDH patients with room air, versus patients with supplemental low-flow oxygen (2-6 Litre/min O2) during the early post-operative period. Secondary outcomes included recurrence rate, 30-day mortality, and functional outcome in terms of modified Rankin Scale (mRS) at 3 months and 6 months.  ***Result:***  In total 55 patients were recruited in this study. The average pneumocephalus volume was 22.4ml (range: 1ml-128.5ml) in the 1st post-operative CT. The average interval between the 1st and 2nd CT was 30.9 hours (range: 5.3hour-93.8 hours). The average pneumocephalus volume in the 2nd CT was 12.8ml (range: 0ml-125.9ml). The average hourly resorption rate of pneumocephalus was 1.11% (SD 0.6%) for room air versus 2.39% (SD 1.6%) with supplemental oxygen therapy (p<0.001). There were no significant differences in the secondary outcomes.  ***Conclusion:***  Pneumocephalus resorption rate was significantly higher in cSDH patients with low-flow supplemental oxygen during the early post-operative period. Further studies are required to determine the optimal timing, dosage and duration of the oxygen therapy for any potential improvement in the clinical outcomes. |

(250 words)