Journal club

Rebecca Lucy Crook

TREATMENT FOR AMBULATORY COVID-19: INHALED BUDESONIDE REDUCES NEED FOR URGENT CARE VISITS BUT HAS NO IMPACT ON VIRAL LOAD

There are currently no evidence-based treatments for ambulatory patients with SARS-Cov-2. Ramakrishnan *et al* (*Lancet Respir Med* 2021; doi:10.1016/S2213-2600(21)00160-0) investigated the effects of inhaled budesonide in a phase II, randomised, open-label study of adults with presumed or proven COVID-19 infection within 7 days of symptom onset and not requiring hospitalisation. Recruitment was in primary care or testing centres and 87% (146/167) of assessed patients were randomised. Participants were assigned to either usual care (n=73) or 800 µg twice daily inhaled budesonide (n=73) until fully recovered, with follow-up occurring until day 28. Significantly fewer participants in the treatment group met the primary outcome of a SARS-Cov-2 related urgent care visit (15% vs 3%, p=0.009). The treatment group also demonstrated a shorter time to recovery (7 days vs 8 days, p=0.007). No significant difference was found in complete symptom resolution at day 14 (p=0.166), days with oxygen saturations ≤94% (p=0.627) or change in viral load at day 14 (p=0.554). The number needed to treat to prevent an urgent care visit was 8. These results suggest budesonide may be an effective treatment for early SARS-Cov-2 infection although further validation is needed. If these data are repeated in a phase III trial, the relatively low cost and short duration of treatment could make inhaled budesonide a globally viable treatment option in case management.

CATASTROPHIC HEALTH COSTS IN TUBERCULOSIS: TWO DECADES OF DATA REVEALS NO SIGNIFICANT CHANGE IN INDIA

Tuberculosis (TB) remains a significant cause of morbidity and the cost of treatment may also contribute to financial hardship. The WHO's End-TB Strategy aims to have 0% of families affected by TB face catastrophic health costs (defined as health cost >40% of household income net of subsistence needs) by 2025. With India experiencing the highest annual case numbers of TB, Prasad *et al* (*Front. Public Health* 2021;9:614466) investigated TB sufferers' disease-related expenditure in

the country through analysis of four surveys conducted from 1995 to 2018. Data collected from participants in the four rounds for outpatient (1995–1995, n=580; 2004–2005, n=671; 2014, n=299 and 2017–2018, n=275) and inpatient (1995–1995, n=756; 2004–2005, n=901; 2014, n=610 and 2017–2018, n=610) contributed to the analysis. Expenditure was adjusted using the consumer price index and converted to US\$ to allow comparison to the final time point. Overall expenditure on outpatient care has oscillated with a general upwards trend (\$7 in 1995–1996 compared with \$22 in 2017–2018). This trend was seen across both public and private healthcare systems. The prevalence of catastrophic health costs resulting from one episode of outpatient care has remained low, with the most recent time point showing a rate of 0%. However, this is in contrast to the overall expenditure (\$111 in 1994–1995 and \$110 in 2017–2018) and prevalence of catastrophic expenditure (16.5% in 1995 to 6%–18% in 2017–2018) associated with inpatient care which has remained substantial and static over the last two decades. With no real progress made in addressing the pecuniary disadvantage suffered by patients with TB in one of the highest burden countries, the three pillars of the END-TB Strategy have a lot to achieve if they are to meet their goals.

NON-INVASIVE RESPIRATORY SUPPORT FOR COVID-19: SAFETY OUTSIDE OF AN INTENSIVE CARE UNIT

The SARS-Cov-2 pandemic has caused a resource crisis, particularly in intensive care capacity. Many have responded to this by delivering non-invasive respiratory support (NRS) outside formal intensive care or high-dependency units. Franco *et al* (*Eur Respir J* 2020;56:2002130) have reported outcomes from a large multicentre cohort using this approach. A total of 670 patients with SARS-Cov-2 across nine hospitals in Italy were given NRS via continuous positive airway pressure (CPAP; 49.3%), non-invasive ventilation (NIV; 26.4%) or high-flow nasal cannulae oxygen (HFNC; 24.3%). The mean patient age was 68 years, 69% were men, mean sequential organ failure assessment (SOFA) score was 3.3 (SD 1.7) and mean PaO₂/FiO₂ was 152 mm Hg (SD 79). The 30-day mortality for each group was as follows: CPAP 30.3%, NIV 30.5% and HFNC 16.0%. When adjusted for comorbidity there was no significant difference in between-group mortality rates, endotracheal intubation rates or length of stay. The overall infection rate of staff caring for patients on NRS with SARS-Cov-2 was 11%, compared with the 3.8% hospital worker average. The rate was highest in nurses at 13.8%, despite appropriate use of personal protective equipment. While

this paper lacks the randomised-controlled trial conditions that RECOVERY-RS provides, it is a useful benchmark for those worldwide providing a similar service. More data are needed on the true rates of healthcare worker infection in those providing NRS to patients with SARS-Cov-2, as it has far reaching implications for the future care of other similar conditions.

THREE DAYS OF ANTIBIOTICS MAY BE SUFFICIENT TO TREAT INPATIENT MODERATE SEVERITY COMMUNITY-ACQUIRED PNEUMONIA

There is ongoing debate regarding the optimum duration of antibiotics for patients hospitalised with community-acquired pneumonia (CAP), with the British and European guidelines differing by 3 days. To help answer this question, Dinh *et al* (*Lancet* 2021;397:1195) have conducted a multicentre, randomised, double-blind controlled non-inferiority trial of 3 (truncated) vs 8 (standard) days of antibiotics (co-amoxiclav or a third-generation cephalosporin) for moderate severity CAP. A total of 310 patients were recruited, with a median age of 72.5 years and day 0 pneumonia severity index score of 80.5. In the intention-to-treat analysis, the cure rate on day 15 was 77% in the standard duration treatment group (8 days) and 68% in the truncated duration group (3 days), with a between group difference of 9.42% (95% CI -0.38 to 20.04), within the 10% non-inferiority margin. The cure rate at 30 days was very similar and also indicated non-inferiority. No significant difference was seen in mortality at day 30 (2% standard, 1% truncated, p>0.99), length of hospital stay (median 5.0 days standard, 6.0 days truncated, p=0.74) or recovery time (median 15.0 days standard, 15.5 days truncated, p=0.33) between the two groups. While this study provides useful data about the possibility of shortening antibiotic therapy for CAP, the wide CIs and inclusion of only those prescribed a narrow selection of antibiotics means care is needed in translating the findings into practice.

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Gloucestershire Hospitals NHS Foundation Trust,
Gloucester, UK

Correspondence to Dr Rebecca Lucy Crook,
Gloucestershire Hospitals NHS Foundation Trust,
Gloucester GL1 3NN, UK; rebecca.crook2@nhs.net