



Journal club

Beenish Iqbal

FINDING THE 'OPTIMUM' TREATMENT FOR MALIGNANT PLEURAL EFFUSION

Malignant pleural effusion (MPE) is a common problem in advanced malignancies and causes debilitating breathlessness leading to poor quality of life. There are two treatment options available to 'definitively' manage MPE which include chest drain with talc pleurodesis and indwelling pleural catheters (IPCs). Although both treatments have been in use for a long time, there has been limited research on the impact of these treatments on patient quality of life. Sivakumar and colleagues (*Eur Respir J* 2023, DOI: 10.1183/13993003.01215-2022) evaluated the impact of outpatient indwelling pleural catheter with talc slurry vs inpatient chest drain with talc pleurodesis on the quality of life of MPE patients in a multicentre, randomised controlled trial (OPTIMUM). This study was undertaken at 11 hospitals in the UK and one in Australia. 142 patients were randomised 1:1 to the IPC or chest drain. The primary outcome was global health status, measured by a validated EORTC-QLQ C-30 questionnaire at 30 days post-randomisation. An 8-point difference in the score was considered clinically meaningful. There was a statistically significant improvement in the global health status at 30-days in both IPC (mean difference 13.11 [95%CI 5.6 to 21.1]; $p=0.001$) and chest drain arms (mean difference 10.11 [95%CI 4.5 to 15.7]; $p=0.001$) and this effect was sustained at 60 and 90-day follow-up. However, there was no statistically significant difference in quality of life between the two treatment arms (observed mean difference at 30 days of 2.06 [95%CI -5.86 to 9.99]; $p=0.61$). This implies that outpatient management with IPC is not superior to inpatient chest drain and talc pleurodesis in improving the quality of life of patients with MPE. The risk benefits of both treatments should be discussed with patients to help them make an informed decision.

CLEARING THE 'MIST' AROUND THE MANAGEMENT OF PLEURAL INFECTION

Chest drainage and antibiotics remain the standard medical treatment for treating pleural infection. However, this management fails in about one-third of patients who require further treatment with intrapleural

enzyme therapy (IET) or surgery. There have been no research trials directly comparing the role of early IET and surgery in treating pleural infection. Bedawi and colleagues (*AJRCCM* 2023 doi: 10.1164/rccm.202305-0854OC) conducted a three-arm feasibility randomised trial comparing standard care, early IET and surgery in patients with pleural infection (MIST-3 trial). The trial recruited from eight centres in the UK and the primary outcome was the feasibility of randomisation. 60 patients were randomised to Standard care ($n=21$), IET ($n=19$) and Surgery ($n=20$). Despite the impact of COVID-19, 62% of eligible patients were successfully randomised supporting the feasibility of early use of IET and surgery for pleural infection. The study demonstrated a high rate of early cross-over to IET or surgery in the standard care arm which showed that the clinical treatment has evolved in favour of early introduction of these 'aggressive' treatments. The treatment compliance was highest in the IET arm (79%) compared with surgery (50%) and the overall adverse events were low for all interventions. The results of this study are encouraging to guide change in the treatment paradigm for pleural infection. Further definitive research into early intervention with IET or surgery beyond standard care is needed to improve patient outcomes.

CHANGING MINDSETS AND GUIDING CARE: 'THE NEW BTS PLEURAL DISEASE GUIDELINES'

The much-awaited BTS Pleural Disease guidelines were published in 2023. The recommendations in these guidelines are focused on key clinical questions concerning physicians in the management of common pleural diseases which makes them practical and clinically relevant. The treatment of pneumothorax had a paradigm shift with patient symptoms being the decisive factor to guide management rather than the size of pneumothorax (compared with 2010 guidelines). Primary spontaneous pneumothorax (PSP) treatment has changed significantly with the introduction of conservative care in large asymptomatic PSP and ambulatory care if local pathways are in place. In pleural infection, a quicker review of standard care at 48 hours with a lower threshold to escalate treatment to either surgery or intrapleural enzyme therapy has been recommended. For undiagnosed pleural effusions, early imaging and a low threshold for ultrasound-guided or thoracoscopic pleural biopsies have been highlighted to improve diagnostic yield.

The management of malignant pleural effusion includes both IPC and chest drain with talc pleurodesis for patients with good lung expansion but IPC or therapeutic aspirations for patients with non-expandable/trapped lung. BTS also published a 'Statement on Pleural Procedures' which will serve as a reference guide for all clinicians to undertake safe pleural interventions in their local setting.

Correcting the 'TARGET' in pleural biopsies

Patients with suspected pleural malignancy but a negative first biopsy continue to pose a diagnostic challenge. Due to the patchy nature of mesothelioma, PET-CT is sometimes used to guide a repeat biopsy in highly suspicious cases, but it is unclear if this approach improves the diagnostic yield. Foneska and colleagues (*European Respiratory Journal* 2023, 10.1183/13993003.01295-2023) investigated if PET-CT guided pleural biopsy was better than standard CT-guided biopsy in patients with suspected pleural malignancy but a negative first biopsy (TARGET trial). They conducted a multicentre, randomised controlled trial and recruited 59 patients from 8 UK centres, randomised 1:1 to the PET-CT and standard CT-guided biopsy arms. The study was designed to detect a 30% difference in the diagnostic sensitivity of PET-CT compared with CT alone with an 80% power (at 5% statistical significance). They found that the sensitivity of pleural biopsy in diagnosing pleural malignancy was 81% (95%CI: 54 to 96%) in the PET-CT arm compared with 79% (95%CI: 54 to 94%) in the CT-only arm, with negative predictive value of 73% (95%confidence interval: 39 to 94%) and 64% (95%confidence interval: 31 to 89%) respectively. Although the study under-recruited (planned 78 patients), the study did not detect a meaningful role of PET-CT in guiding CT-guided biopsies which continue to be an important diagnostic tool, especially for patients unfit for surgical biopsies.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not applicable.

Ethics approval Not applicable.

Provenance and peer review Not commissioned; internally peer reviewed.

© Author(s) (or their employer(s)) 2024. No commercial re-use. See rights and permissions. Published by BMJ.



To cite Iqbal B. *Thorax* 2024;**79**:486.

Thorax 2024;**79**:486.
doi:10.1136/thorax-2024-221582

Oxford Respiratory Trials Unit, University of Oxford, Oxford, UK

Correspondence to Dr Beenish Iqbal, Oxford University, Oxford, UK; beenish.iqbal@ouh.nhs.uk

