Surgery or radiotherapy for colorectal lung metastases- does it really matter?

This issue of the journal includes a retrospective study comparing the efficacy of surgical resection and stereotactic radiotherapy (SBRT) in the management of lung metastases in patients with colorectal cancer (CRC). The unit of investigation was the lung nodule and the primary outcome is local recurrence assessed by radiological appearance. The headline result is that surgery appears significantly more efficacious than SBRT. But this was a retrospective case-record study with marked differences in the numbers and the clinical characteristics of the two groups. Despite thorough propensity matching and adjustment to allow a legitimate comparison, concerns must remain about the reliability of the conclusion because of residual confounding and 'unknown unknowns'. The question about the best way of removing lung metastases can only be answered by a randomised trial. But the only published attempt failed to recruit adequately and was met with scorn…..

But does the result matter anyway? The aim of any treatment must be to improve relevant clinical outcomes. Is local recurrence a meaningful outcome? Removal of individual lung metastases, which are almost always asymptomatic, is unlikely to be of palliative benefit and it remains uncertain whether or not it improves survival, despite the widespread belief that it does. We have argued before that the observational evidence underpinning this belief is unreliable because of selection bias, immortal time bias and inadequate controls. Is this 'pillar of modern thoracic surgery' built on solid evidence or sand? The results of the randomised PulMiCC trial will be published soon and these may throw some light on this. But we already know that increased surveillance of CRC patients for metastatic disease may detect metastases sooner and lead to more intervention but does not improve overall survival.

The study by Nelson et al fails to provide any survival data. The overall mean number of metastases per patient is 2.2. The median numbers of metastases in the surgery and SBRT groups are 3.0 and 1.5 respectively and so it is unlikely that many patients had truly solitary metastases. The median disease-free intervals were 1.3 and 2.5 years respectively. Increasing number of metastases and shorter disease-free interval are indicators of a poor prognosis and so it is very likely that the great majority of patients in this series died of disseminated CRC. Neither thoracoscopic surgery nor SBRT for lung metastases are risk-free interventions and are associated with short- and long-term risks. Without clear evidence of a survival benefit how many of these 826 interventions were worthwhile?

So, as well as there perhaps being waste of clinical resources in carrying out these treatments, there may well have been a waste of research time and effort in trying to answer a question of little clinical relevance.