

The course of lung oligometastatic colorectal cancer may be a reflection of selection for treatment rather than an effect of stereotactic body radiotherapy

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Nicosia et al have provided a detailed report of their retrospective observational study of use of stereotactic radiotherapy (SBRT) in patients with ‘oligometastatic’ colorectal cancer (CRC).[1] Unfortunately the results presented make it hard to justify their optimistic conclusion that it ‘combines high local control rates with a favorable impact on survival outcomes’. The primary outcome of the study—‘time to polymetastatic disease’—has neither biological meaning nor clinical relevance. The distribution of the number of metastases in patients with Stage IV CRC is almost certainly continuous and so their choice of greater than five metastases as the definition of ‘polymetastatic’ disease is entirely arbitrary. ‘Oligometastatic’ disease has no agreed definition and is a condition determined by therapeutic opportunity rather than tumour biology.[2]

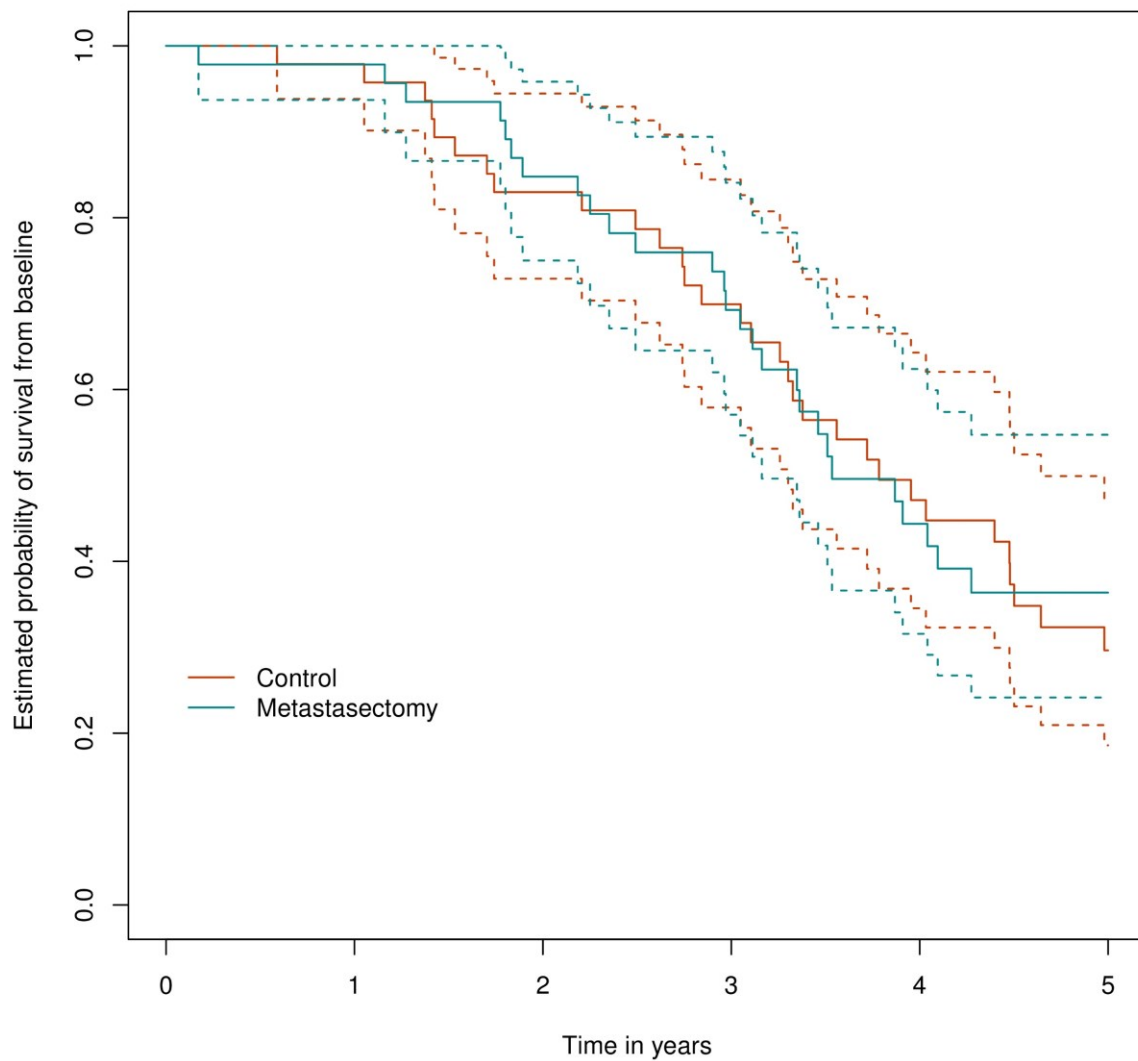
The implausible hypothesis underlying their research is that treating a few detectable lung metastases will somehow prevent or inhibit the growth of occult metastases. But they have given no supporting evidence to support this idea.

The two clinically important outcomes are overall survival (OS) and quality of life (QOL). Nicosia et al did not assess QOL and their recording of OS is meaningless without control data. They claim that the finding of 1-year and 2-year survivals of 76.3% and 71.1% is ‘favorable’, but this is almost certainly the result of patient selection rather than of therapeutic success. There are only two randomised trials investigating the removal or ablation of CRC metastases, PulMiCC and CLOCC, the latter flawed by imbalance in key prognostic indicators.[3, 4] SABR-COMET, a Phase II randomised trial of SBRT which included some patients with CRC, also had an imbalance of prognostic factors favoring the intervention arm.[5] The estimated survival probabilities of the *control* patients from these three trials are shown below and suggest that the findings of Nicosia et al are not exceptional and cannot be reliably attributed to the intervention.

STUDY	1-year survival (%)	2-year survival (%)
Nicosia et al	76.3	71.1
PulMiCC	98*	80*
CLOCC	85*	65*
SABR-COMET	88*	55*

*Estimated survival of control patients from published Kaplan Meier curves

The results of PulMiCC which randomised patients to pulmonary metastasectomy or not, showed no difference in QOL or OS – Hazard Ratio 0.93 (95%CI:0.56,1.56).[3] [Figure]. This together with the control survival data from CLOCC and SABR- COMET make the widely held assumption that few, if any, patients with pulmonary metastases would survive to five years untenable.[6] There is no published evidence that pulmonary metastasectomy or ablation is effective and so SBRT should now only be used to treat pulmonary metastases as part of a large randomized trial.



Legend to Figure

PulMiCC trial Kaplan Meier Analysis. The dashed lines are the 95% Confidence Intervals. Republished here with permission from Colorectal Disease 2020

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