



T2:107

## Is death within one year of diagnosis an indicator of delay in presentation for patients with Sarcomas?

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The reduction in one-year mortality over the last 20 years in major cancer groups has not been seen in Sarcoma patients. There has been little improvement since the introduction of neo-adjuvantive chemotherapy. It is generally considered that death within one year of cancer diagnosis is related to advanced stage at diagnosis, multiple comorbidities or complications of treatment. Sarcomas can present late with protracted duration of symptoms and large size at diagnosis. This study investigates prognostic factors and whether a delay in presentation affects one-year mortality.

4945 newly diagnosed patients identified from a prospectively recorded, single institution oncology database of which 595 (12%) died within one year. Patients alive at one year reported a longer duration of symptoms compared to those who died (median 24 weeks vs. 20 weeks;  $P < 0.020$ ). Times from referral to diagnosis were comparable. A number of factors have been identified in both soft tissue and osteosarcomas. High histological grade (odds ratio 5.88  $P < 0.001$ ) and synchronous metastasis (odds ratio 4.71  $P < 0.001$ ) led to poorer outcomes. Using a Cox-proportional analysis model patient's age, tumour size, metastasis at diagnosis and histological grade were most influential. Where patients died within 1 year, 76% staged TNM 3 or above (HR =4.1).

One-year mortality is easy to measure and well reported. It has now become a proxy for early or late presentation and a performance indicator. It is possible to predict the risk of one-year mortality using factors available at the time of diagnosis. Death within one year does not correlate with a delay in presentation, but is associated with advanced disease at diagnosis.

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