

PET CT for plasma cell dyscrasias

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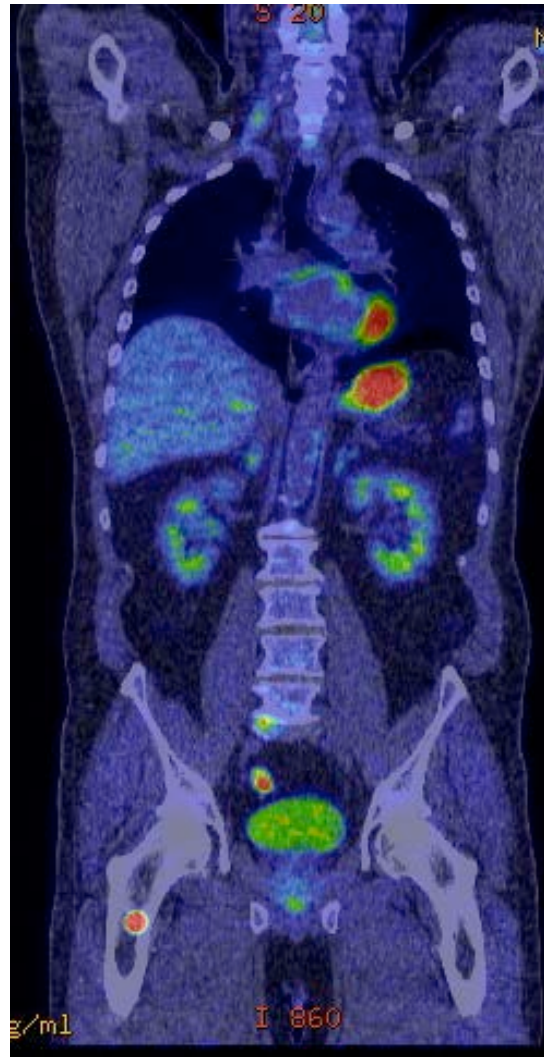
Why use PET CT for plasma cell dyscrasias?

- Assessment of plasmacytomas checking for other sites of disease - ? Solitary
- Targeting radiotherapy, useful in patients where MRI contraindicated
- Assessing multifocal disease in myeloma including sites of extramedullary disease
- Assessment of disease response

PET versus MRI

- MRI advantages
 - Higher resolution
 - More widely available
 - False negative PET due to transient tumour suppression after treatment
 - Can also detect avascular necrosis
- PET CT advantages
 - No problem if metallic implants
 - Less motion artefact
 - Cheaper
 - Less risk of renal impairment with contrast
 - Superior for monitoring treatment response

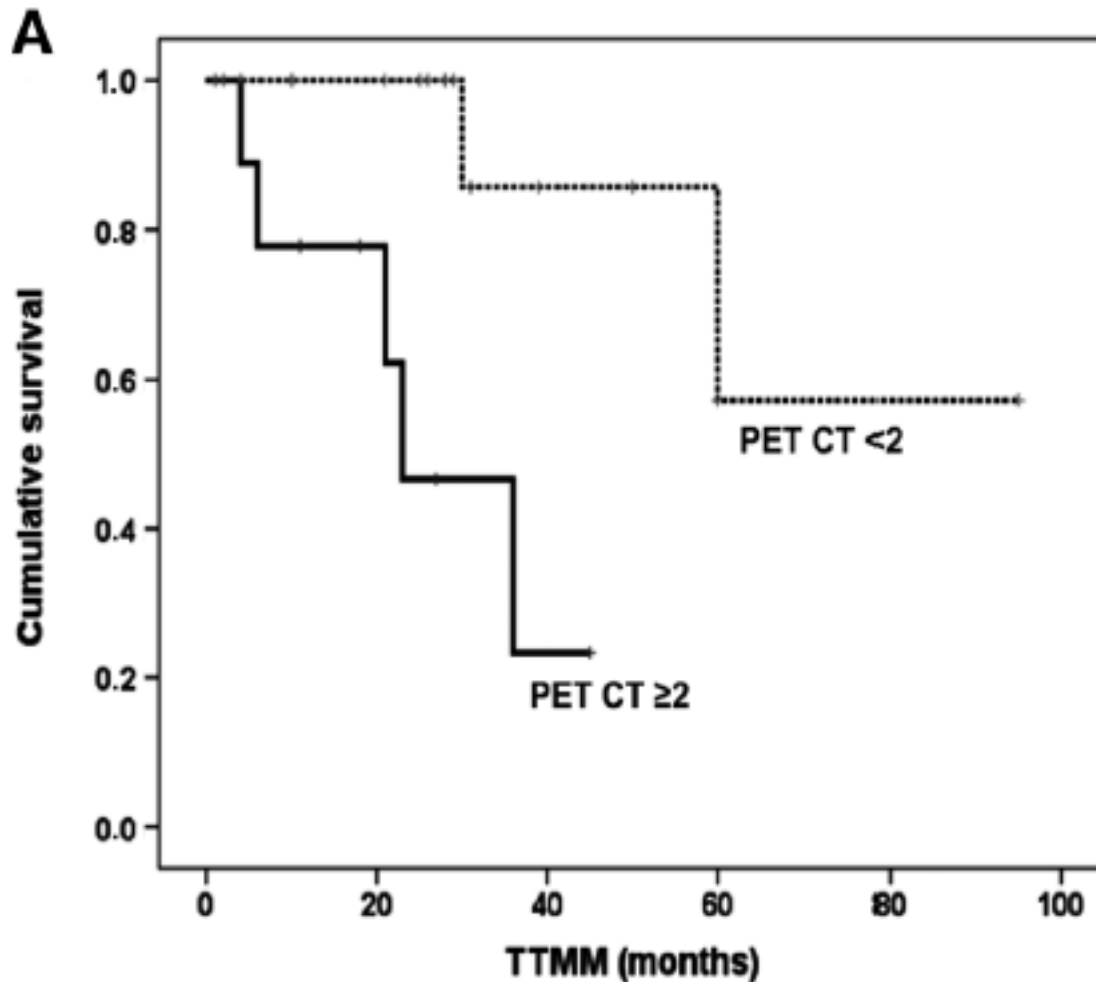
Assessment of plasmacytomas



Left: Apparently solitary plasmacytoma in T9

Right: Disease also present in right femur SUV max 17.5

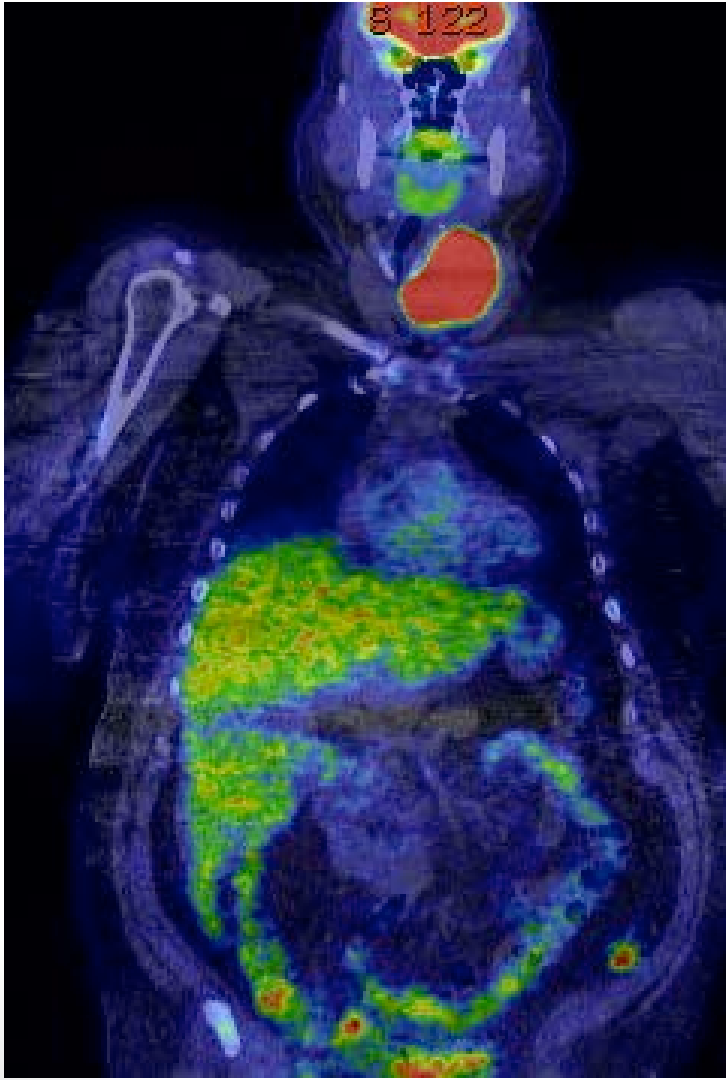
PET CT assessment of plasmacytomas at diagnosis



Fouquet et al. Clin Can Res 2014;20:3254-60

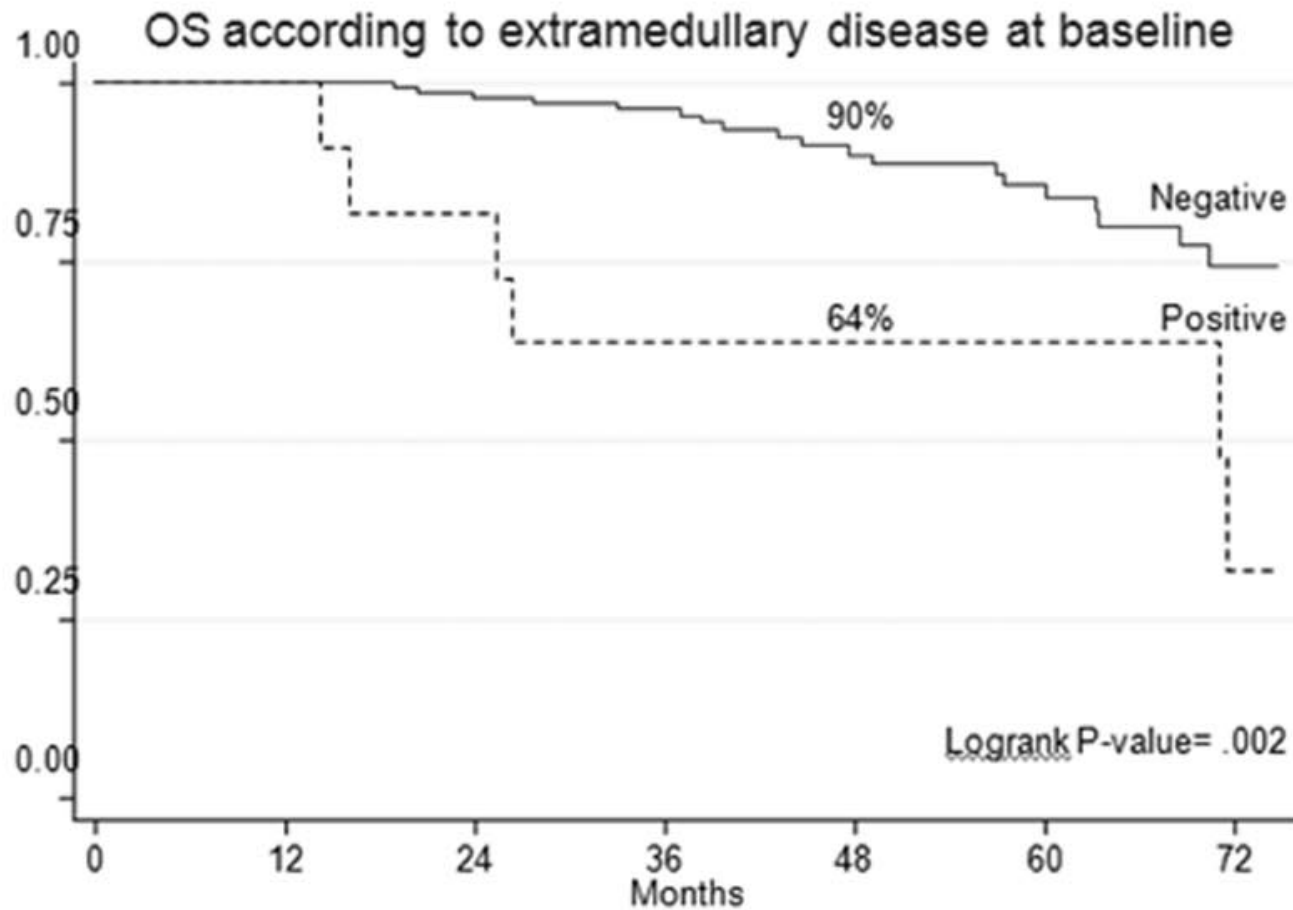
TTMM – time to transformation to multiple myeloma

Extramedullary disease



Solitary thyroid plasmacytoma
SUV max 24.8

PET CT assessment of extra-medullary disease

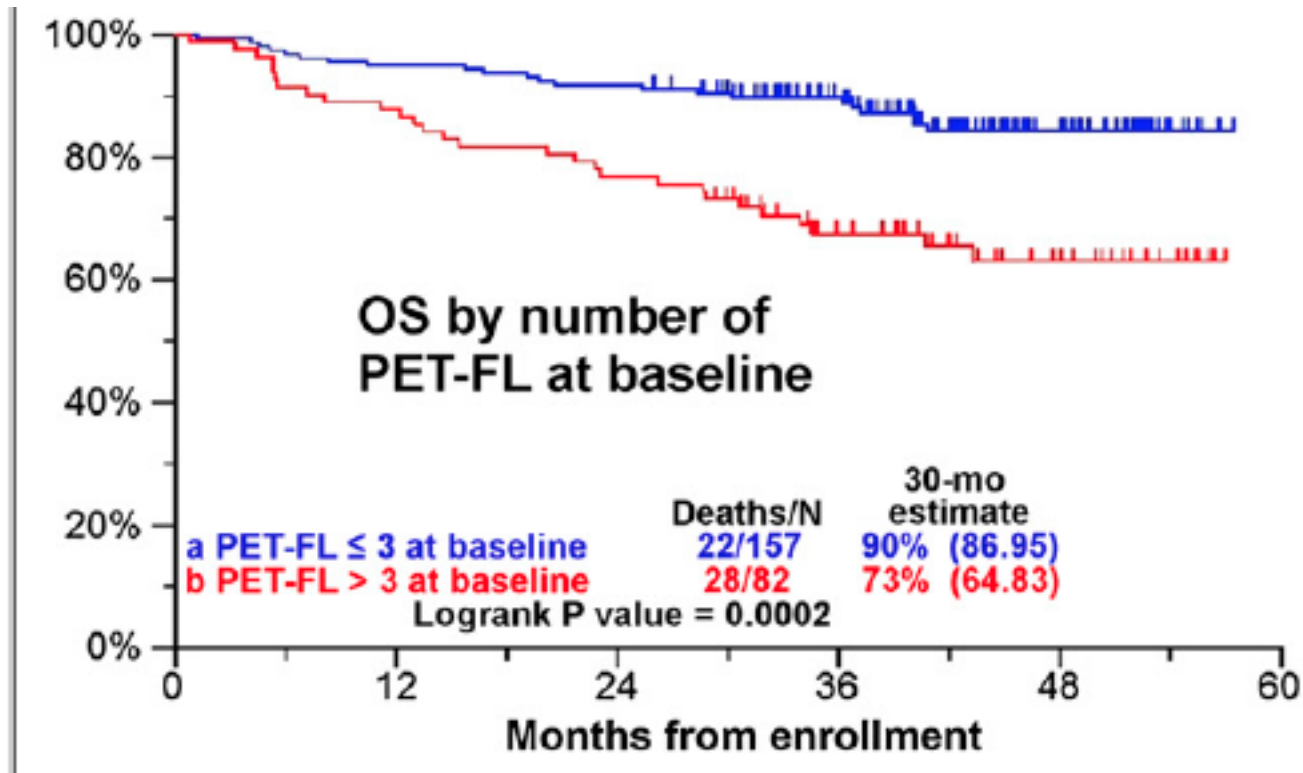


Multifocal disease

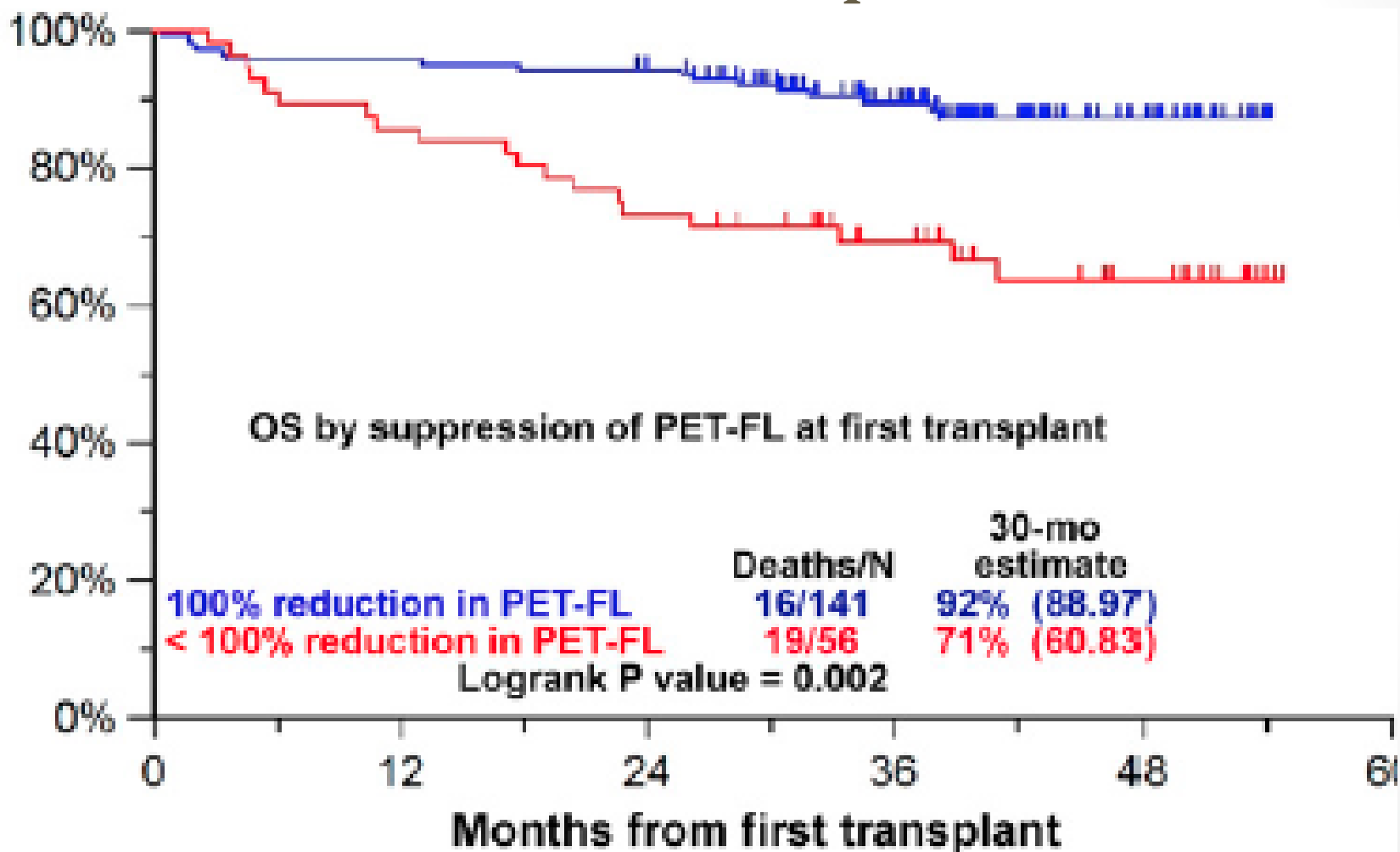


Myeloma with multifocal disease
SUV max 17.8

Overall survival comparing number of FDG avid lesions at myeloma diagnosis



Overall survival comparing if FDG avid lesions resolved at transplant



How are we using PET CT?

- 82 PET CTs performed on 50 patients identified between 01/01/2010 and 31/12/2013

Indication	Frequency
Assessing multifocal disease in myeloma	28
Plasmacytoma assessment	25
Assess treatment response	25
Identify radiotherapy target	2
POEMS syndrome	1
Castleman's disease	1
TOTAL	82

PET CT use in Thames Valley

- 22/50 patients followed up with repeat PET CT to assess response
- No instances of renal failure (0/49 where data available)
- Other sites of disease identified in 9/25 cases of suspected primary plasmacytoma. Reclassified 36% of patients as multiple plasmacytoma and hence treated on myeloma pathway
- 7 PET CTs identified extra-medullary disease in myeloma patients

Any questions?