A magnetic resonance imaging-based prognostic scoring system to predict outcome in transplant-eligible patients with multiple myeloma
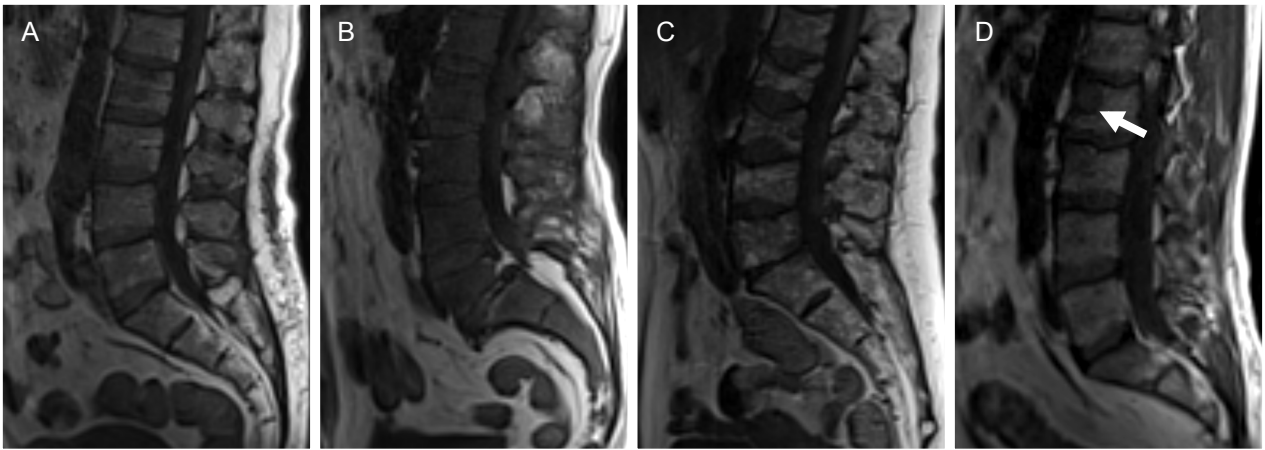
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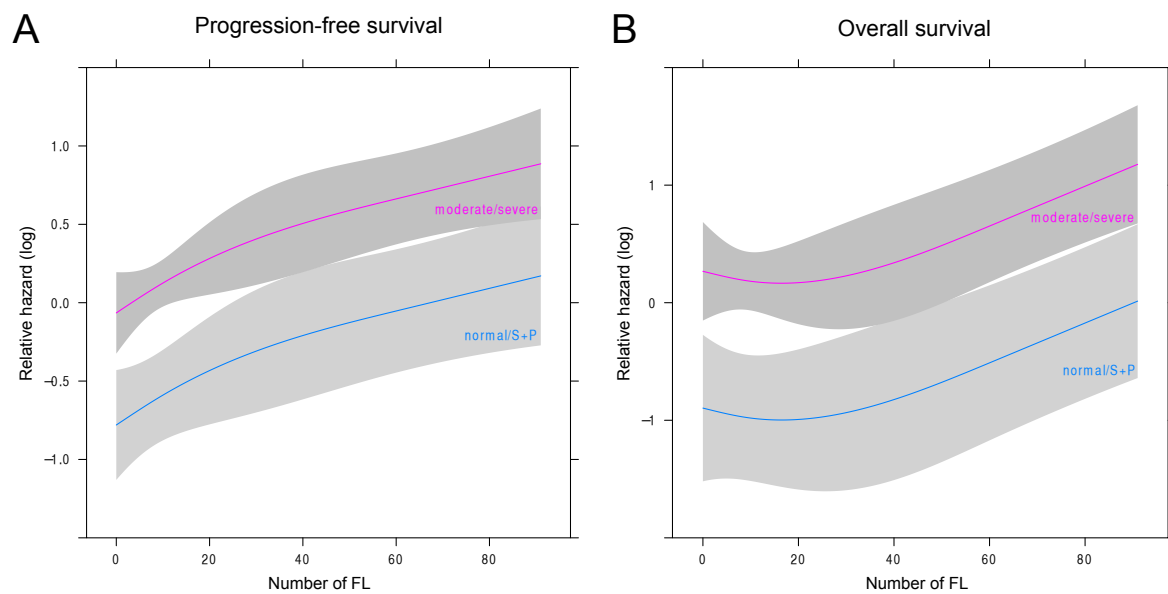
Supplemental Figure 1: Detectable MRI patterns. Exemplary T1-weighted MRI images of minimal DI (A), severe DI (B), S&P (C) and FL (D) patterns.

Supplemental Figure 2: Relative hazards for the increasing numbers of MRI focal lesions. Relative hazards (logarithmic) derived from a Cox model with predictors DI and number of whole-body MRI focal lesions using restricted cubic splines to allow for a potentially non-linear functional relationship with (A) PFS and (B) OS.

Characteristic	n = 161	
	n	%
Sex		
male	98	60.9
female	63	39.1
Age		
median (range)	58.0 (27.3 – 73.2)	
Heavy chain isotype		
IgG	98	60.9
IgA	30	18.6
LCD	28	17.4
IgD	3	1.9
asecretory	2	1.2
Light chain isotype		
kappa	111	68.9
lambda	48	29.8
asecretory	2	1.2
ISS stage		
I	97	63.0
II	30	19.5
III	27	17.5
missing	7	-
Adverse cytogenetics		
del 17p		
done	145	
positive (% of done)	15 (10.3)	
t (4;14)		
done	144	
positive (% of done)	13 (9.0)	
gain 1q21 (> 2 copies)		
done	144	
positive (% of done)	55 (38.2)	
LDH (>ULN)		
no	130	81.2
yes	31	18.8
wbMRI FL (>25)		
no	121	75.2
yes	40	24.8
axMRI FL (>7)		
no	124	77.0
yes	37	23.0
MRI DI		
normal	38	23.6
salt and pepper	13	8.1
moderate	61	37.9
severe	49	30.4

Supplemental Table 1: Baseline patient and MRI characteristics.

Parameter	n/N	PFS			OS		
		HR	95%-CI	p value	HR	95%-CI	p value
MRI wbFL (>25 vs. 0-25)	*40/161*	1.90	1.27 – 2.85	**0.002**	1.89	1.02 – 3.49	**0.04**
MRI axFL (>7 vs. 0-7)	*37/161*	1.82	1.21 - 2.75	**0.004**	2.00	1.08 - 3.68	**0.03**
MRI DI (moderate/severe vs. normal/S&P)	*110/161*	2.10	1.39 – 3.17	**<0.001**	3.00	1.40 – 6.42	**0.004**
ISS (II vs. I)	*30/154*	1.46	0.93 – 2.29	0.10	1.31	0.63 – 2.76	0.47
ISS (III vs. I)	*27/154*	1.92	1.20 – 3.08	**0.007**	3.29	1.69 – 6.40	**<0.001**
LDH (>ULN)	*31/161*	1.44	0.93 - 2.22	0.10	2.59	1.42 - 4.73	**0.002**
del 17p	*15/145*	1.56	0.89 – 2.74	0.12	1.97	0.87 – 4.44	0.10
t (4;14)	*13/144*	3.01	1.63 – 5.58	**<0.001**	2.67	1.19 – 6.03	**0.02**
gain 1q21 (> 2 copies)	*55/144*	1.62	1.10 – 2.38	**0.01**	2.34	1.29 - 4.26	**0.01**
Adverse cytogenetics	*69/142*	1.85	1.26 – 2.71	**0.001**	2.55	1.35 - 4.83	**0.004**
Induction therapy without novel agents	*67/161*	1.01	0.70 - 1.44	0.97	1.74	0.97 - 3.12	0.06

Supplemental Table 2: Univariate analysis on the impact of MRI patterns and known prognostic factors on progression-free survival (PFS) and overall survival (OS).

		wb-MPSS			
	Stage	I	II	III	Total
	I	34	2	0	36
ax-MPSS	II	4	93	6	103
	III	0	1	21	22
	Total	38	96	27	161

Supplemental Table 3: Cross tabulation of the distribution of MRI-based score (MPSS) using either the whole-body or axial focal lesions cut-offs. The cross tabulation displays the different distribution of patients to the three stages of the MRI-based score (MPSS), depending on whether whole-body (wbFL >25) or axial (axFL >7) MRI classification was used.