IVS in DLBCL

2012 update

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IVS in DLBCL

Inclusion criteria

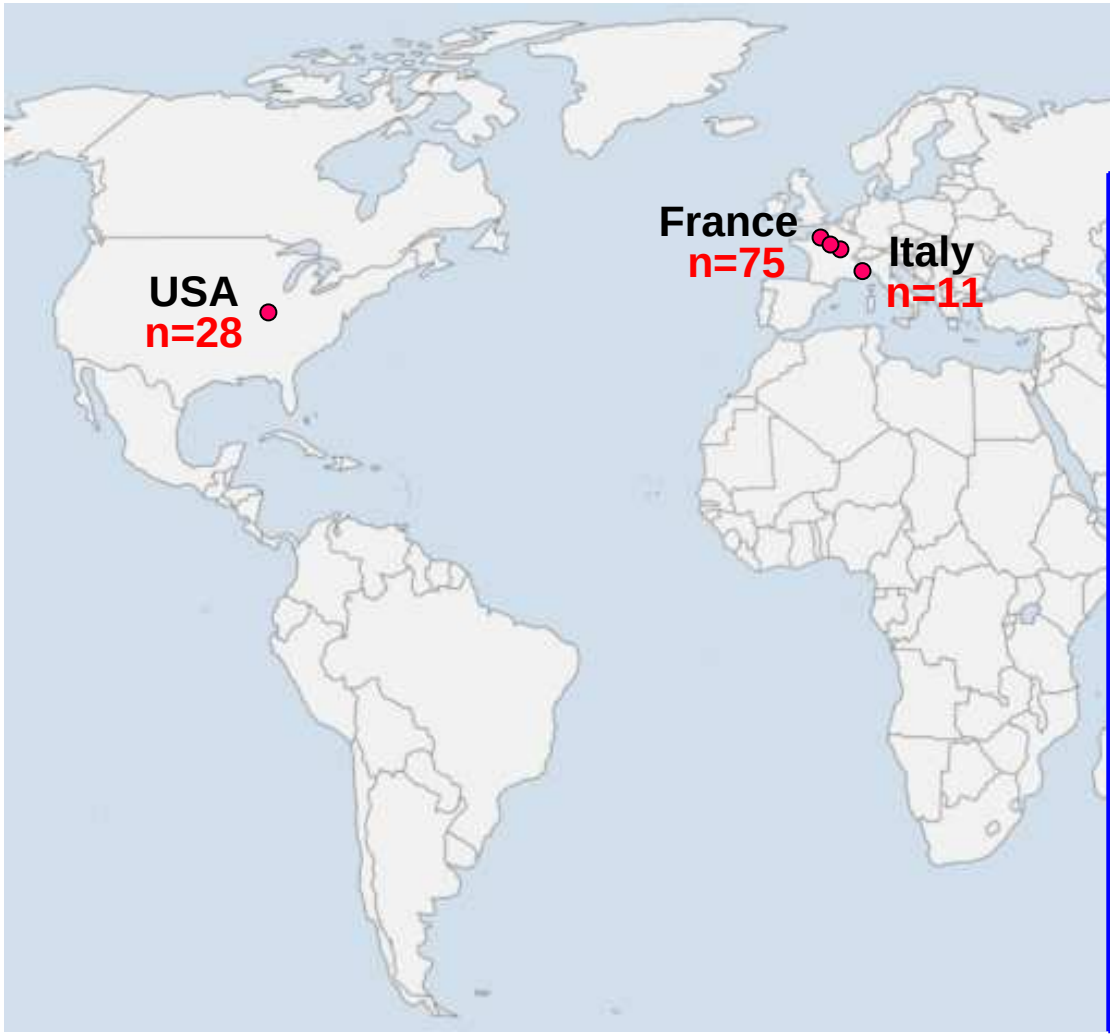
- Newly-diagnosed DLBCL
- PET/CT at baseline and 2 cycles (– 6 C-PET)
- No change of therapy based on interim PET
- First line: R-chemo (CHOP or ACVBP)
- HDT+ASCT in higher-risk pts or as salvage
- Minimum follow-up of 1 y, endpoint = PFS
- Central review (Imagys®)

KEOSYS MEDICAL IMAGING

IVS in DLBCL

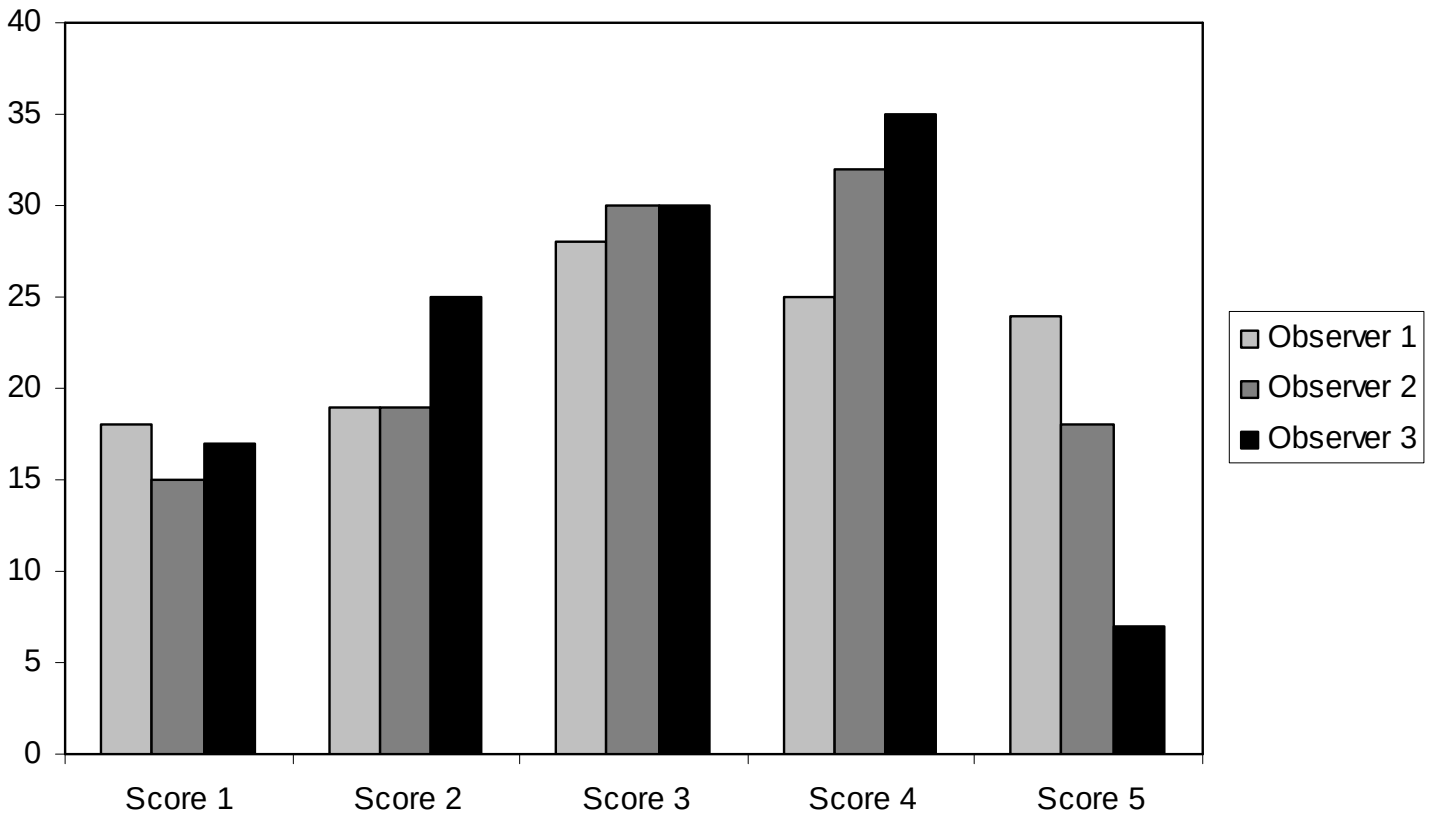
114 pts, 5 centers, 3 observers

inclusions 2003-2010, med F-U 39 months



patients: n=114	
M/F ratio	60%
Median age	56 y (23-80)
>60 y	31%
PS ≥2	30%
Ann Arbor III-IV	82%
LDH>1N	68%
≥2 ENS	35%
aaIPI	
0	6%
1	29%
2	44%
3	21%

Distribution of scores (3 obs.)



→ Definition of score 5 needs revision

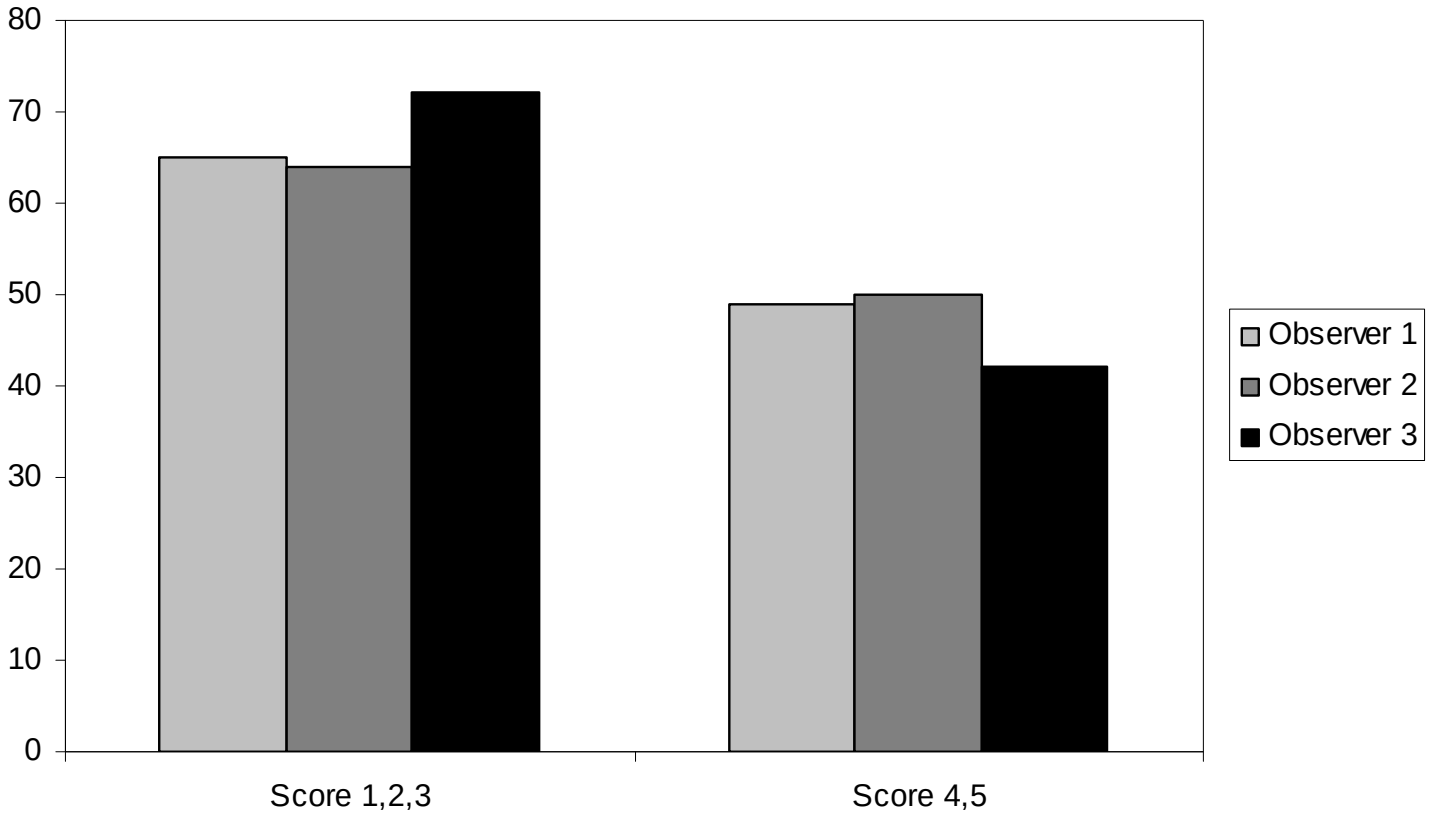
Inter-observer agreement

PET2 Positivity Cutoff	Obs. 1 and 2 Cohen's κ	Obs. 1 and 3 Cohen's κ	Obs. 2 and 3 Cohen's κ
Score ≥ 2	0.33	0.36	0.56
Score ≥ 3	0.65	0.52	0.49
Score ≥ 4	0.80	0.65	0.53
Score ≥ 5	0.71	0.59	0.43
ΔSUV ≤ 66%	0.92	0.82	0.74

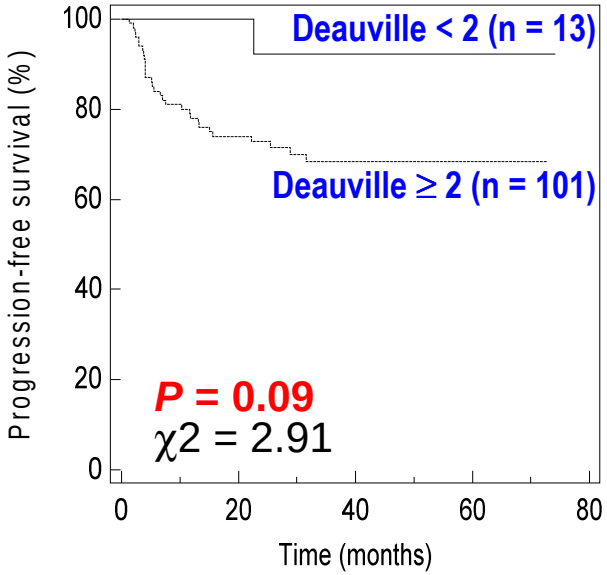
→ moderate to substantial agr^{mt} (**overall 0.66**)

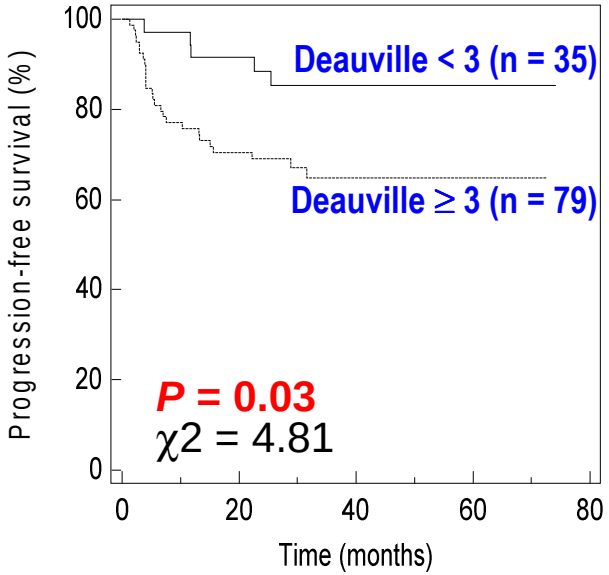
→ substantial to almost perfect (**overall 0.83**)

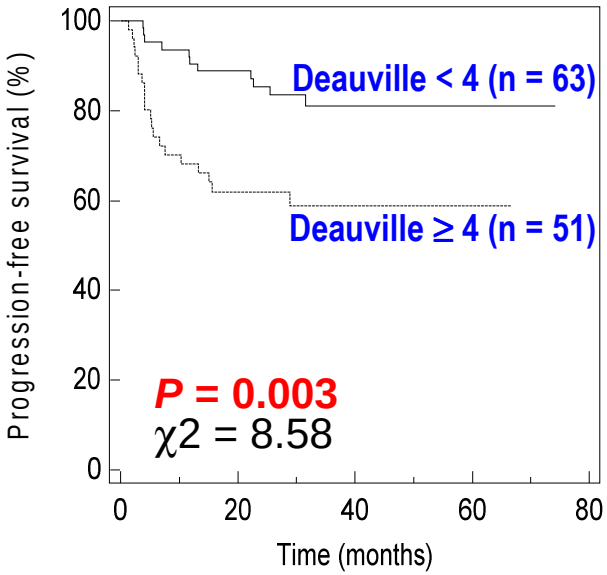
Distribution of scores (3 obs.)

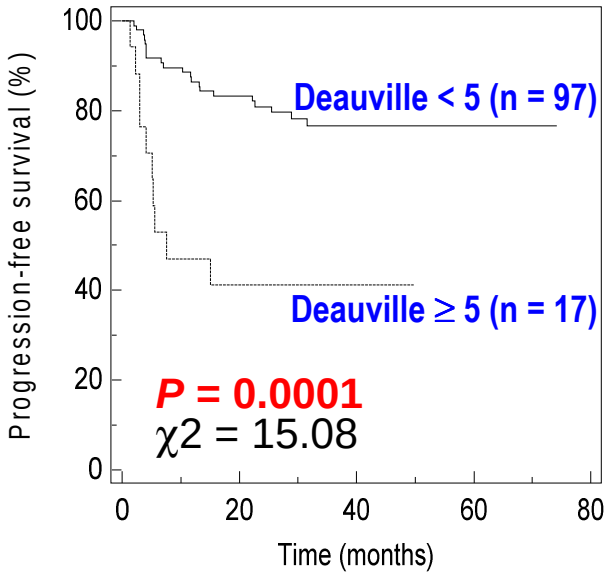


Outcome prediction (Deauville)



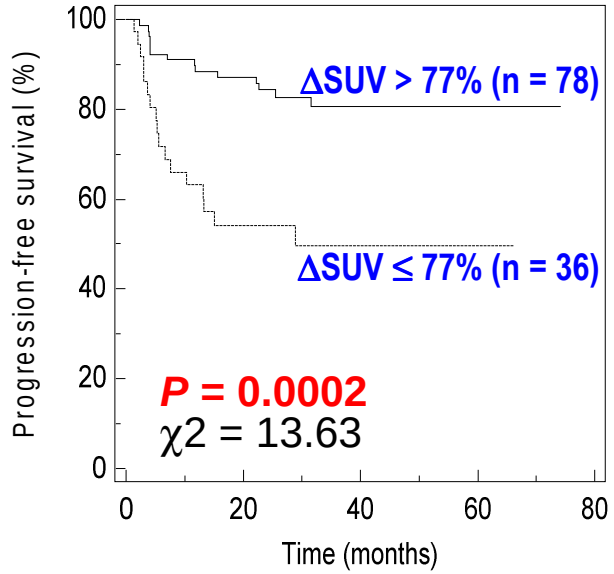


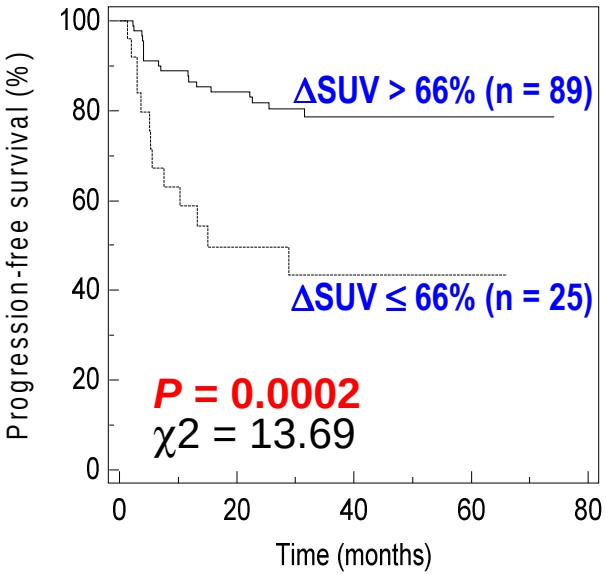


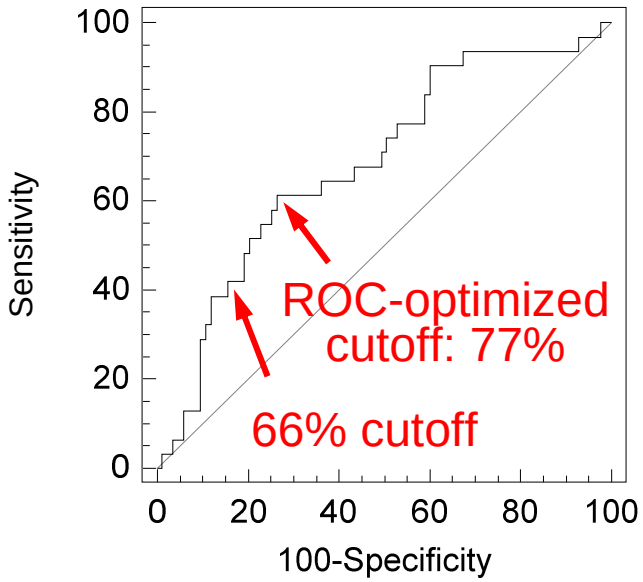


# of prog. = 31
Median f-u = 39 mo

Outcome prediction (ΔSUV)







# of prog. = 31
Median f-u = 39 mo

Cox proportional hazard (Deauville)

Survival time	delaiPFS
Endpoint	PFS

Method	Enter

Sample size	114

Overall Model Fit

Null model -2 Log Likelihood	281,41307
Full model -2 Log Likelihood	273,07573
Chi-square	8,3373
DF	4
Significance level	P = 0,0800

Coefficients and Standard Errors

Covariate	b	SE	P	Exp(b)	95% CI of Exp(b)
Deauville4	1,0543	0,3981	0,0081	2,8699	1,3205 to 6,2373
IPI	0,0338	0,3963	0,9320	1,0344	0,4776 to 2,2402
asct	-0,0199	0,5147	0,9692	0,9803	0,3593 to 2,6746
chimio21_14	0,0787	0,4084	0,8471	1,0819	0,4879 to 2,3993

Cox proportional hazard (ΔSUV)

Survival time	delaiPFS
Endpoint	PFS

Method	Enter

Sample size	114

Overall Model Fit

Null model -2 Log Likelihood	281,41307
Full model -2 Log Likelihood	271,63714
Chi-square	9,7759
DF	4
Significance level	P = 0,0444

Coefficients and Standard Errors

Covariate	b	SE	P	Exp(b)	95% CI of Exp(b)
deltaSUV66	1,2077	0,3919	0,0021	3,3456	1,5581 to 7,1841
IPI	0,1540	0,3968	0,6980	1,1664	0,5381 to 2,5286
asct	-0,0449	0,5200	0,9312	0,9561	0,3469 to 2,6356
chimio21_14	0,1457	0,4101	0,7223	1,1569	0,5200 to 2,5738

Cox proportional hazard (both)

Survival time	delaiPFS
Endpoint	PFS

Method	Enter

Sample size	114

Overall Model Fit

Null model -2 Log Likelihood	281,41307
Full model -2 Log Likelihood	269,09008
Chi-square	12,3230
DF	5
Significance level	P = 0,0306

Coefficients and Standard Errors

Covariate	b	SE	P	Exp(b)	95% CI of Exp(b)
Deauville4	0,7163	0,4479	0,1098	2,0468	
deltaSUV66	0,8684	0,4334	0,0451	2,3830	
IPI	0,0956	0,3990	0,8107	1,1003	
asct	-0,2031	0,5244	0,6985	0,8162	
chimio21_14	0,2473	0,4198	0,5558	1,2805	

Survival time	delaiPFS
Endpoint	PFS

Method	Enter

Sample size	114

Overall Model Fit

Null model -2 Log Likelihood	281,41307
Full model -2 Log Likelihood	269,48737
Chi-square	11,9257
DF	2
Significance level	P = 0,0026

Coefficients and Standard Errors

Covariate	b	SE	P	Exp(b)	95% CI of Exp(b)
Deauville4	0,6871	0,4382	0,1168	1,9880	0,8459 to 4,6720
deltaSUV66	0,8111	0,4250	0,0563	2,2505	0,9825 to 5,1548

Influence of IPI and chemo regimen

	Deauville ≥ 4 3-y PFS (31 prog)	ΔSUV ≤ 66% 3-y PFS (31 prog)
Entire population	81% *vs.* 59% (.003)	79% *vs.* 44% (.0002)
aaIPI		
low-risk (0-1)	83% *vs.* 54% (.03)	77% *vs.* 49% (NS)
high-risk (2-3)	81% *vs.* 61% (.04)	80% *vs.* 40% (.0002)
Chemotherapy		
R-CHOP21	81% *vs.* 56% (.03)	79% *vs.* 40% (.004)
R-CHOP(21+14)	79% *vs.* 58% (.01)	78% *vs.* 39% (.0001)
R-CHOP14/R-ACVBP	81% *vs.* 61% (NS)	78% *vs.* 44% (.01)

Conclusion

- Best Deauville score ≥ 4 (liver)
  - moderate to substantial agreement
  - good outcome prediction
- Quantification (ΔSUV ≤ 66%)
  - better reproducibility
  - same outcome prediction
  - high-risk patients (escalation protocols)
  - all chemotherapy regimens