IVS in DLBCL

Prognostic value of metabolic volumes

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Menton, Sept. 19th, 2014

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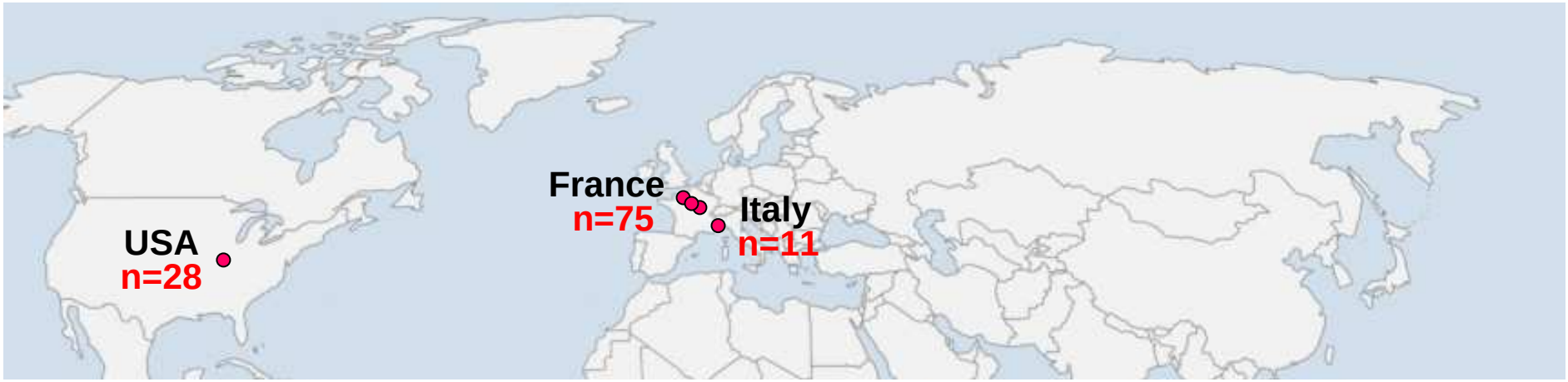
IVS in DLBCL : early PET (2c)

114 pts, 5 centers, 3 observers

inclusions 2003-2010, med F-U 39 months

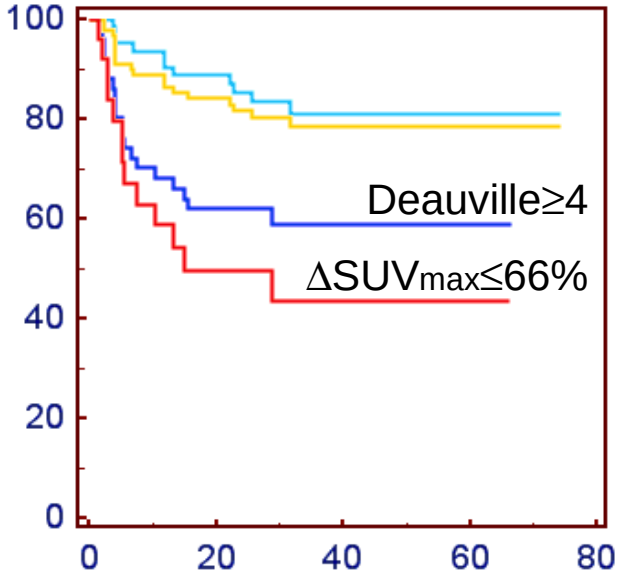


ORIGINAL ARTICLE

An international confirmatory study of the prognostic value of early PET/CT in diffuse large B-cell lymphoma: comparison between Deauville criteria and ΔSUVmax

Emmanuel Itti · Michel Meignan · Alina Berriolo-Riedinger · Alberto Biggi · Amanda F. Cashen · Pierre Véra · Hervé Tilly · Barry A. Siegel · Andrea Gallamini · René-Olivier Casasnovas · Corinne Haioun

Itti et al. *Eur J Nucl Med Mol Imaging* 2013;40:1312-20



IVS in DLBCL : pre-therapy volumes

Same study population

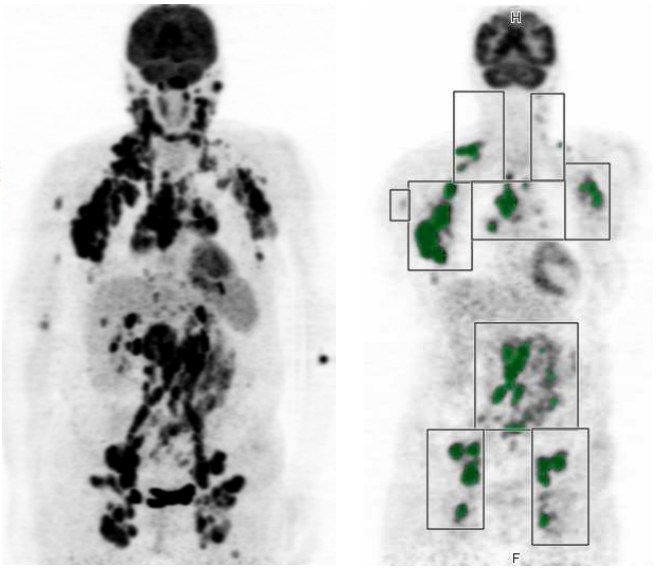
1 obs. (2 obs. in 50 pts)

patients: n=114	
M/F ratio	60%
Median age	56 y (23-80)
>60 y	31%
PS ≥2	30%
Ann Arbor III-IV	82%

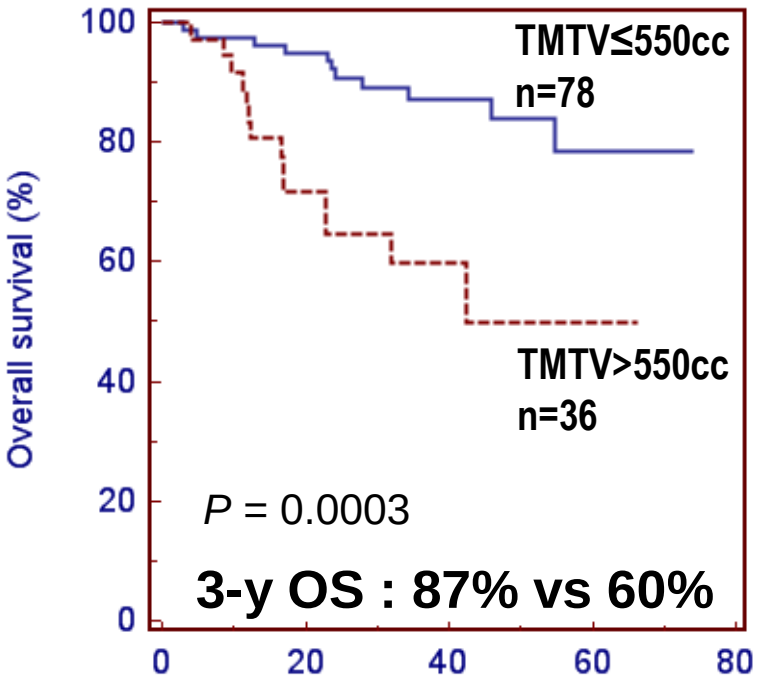
ORIGINAL ARTICLE

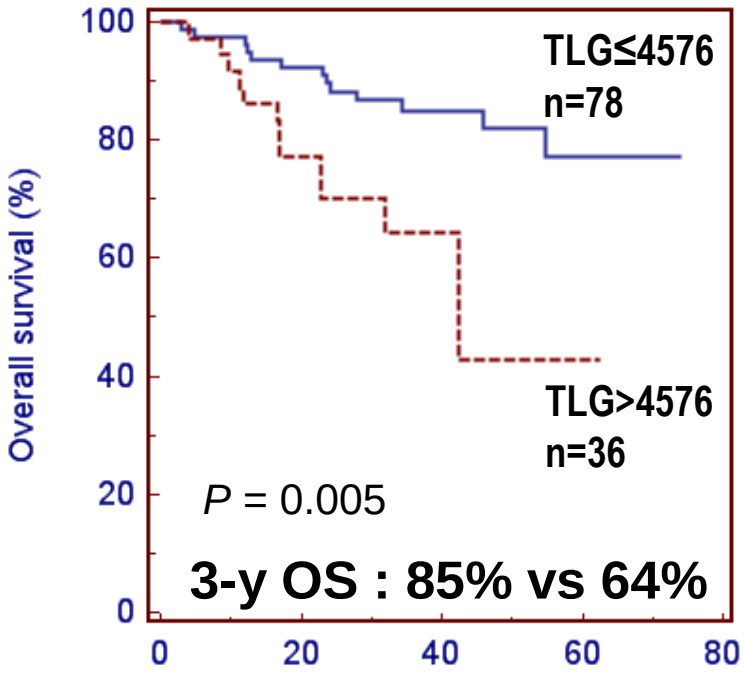
Pretherapy metabolic tumour volume is an independent predictor of outcome in patients with diffuse large B-cell lymphoma

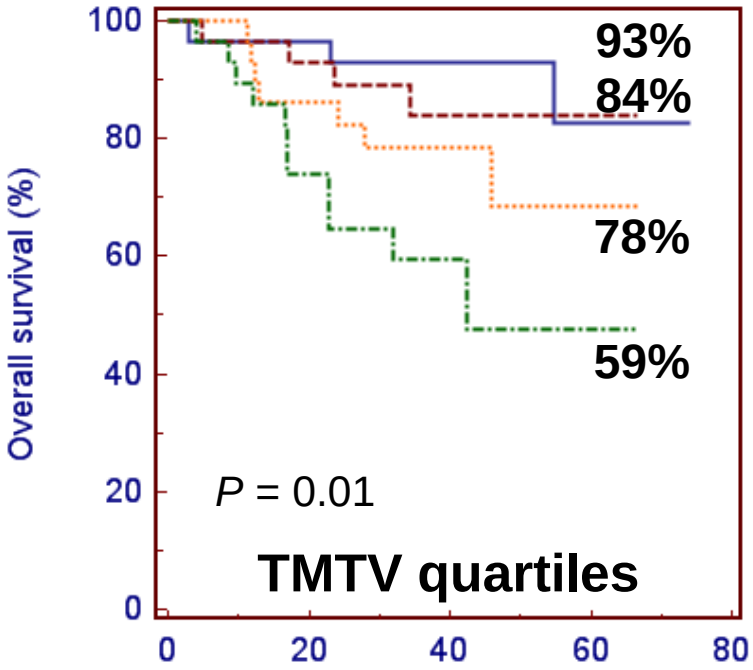
Myriam Sasanelli · Michel Meignan · Corinne Haioun · Alina Berriolo-Riedinger · René-Olivier Casasnovas · Alberto Biggi · Andrea Gallamini · Barry A. Siegel · Amanda F. Cashen · Pierre Véra · Hervé Tilly · Annibale Versari · Emmanuel Itti

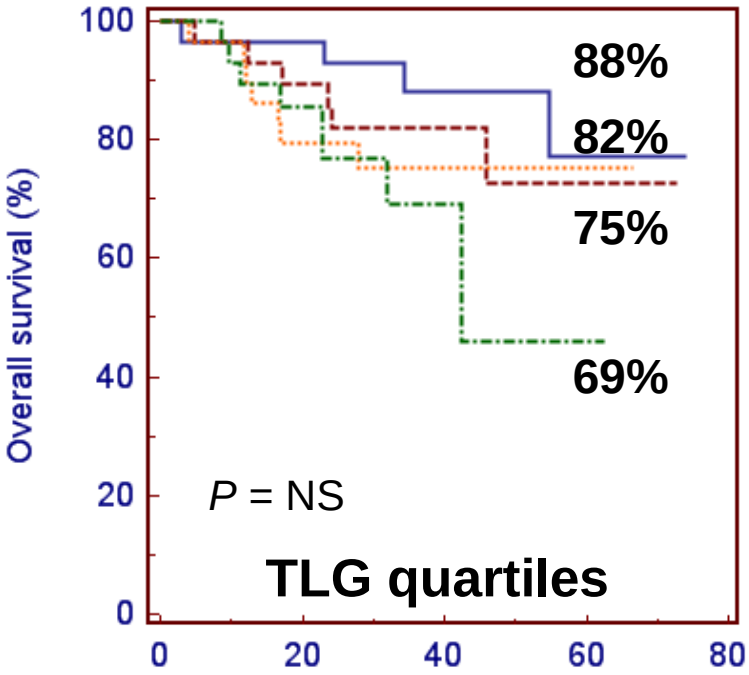


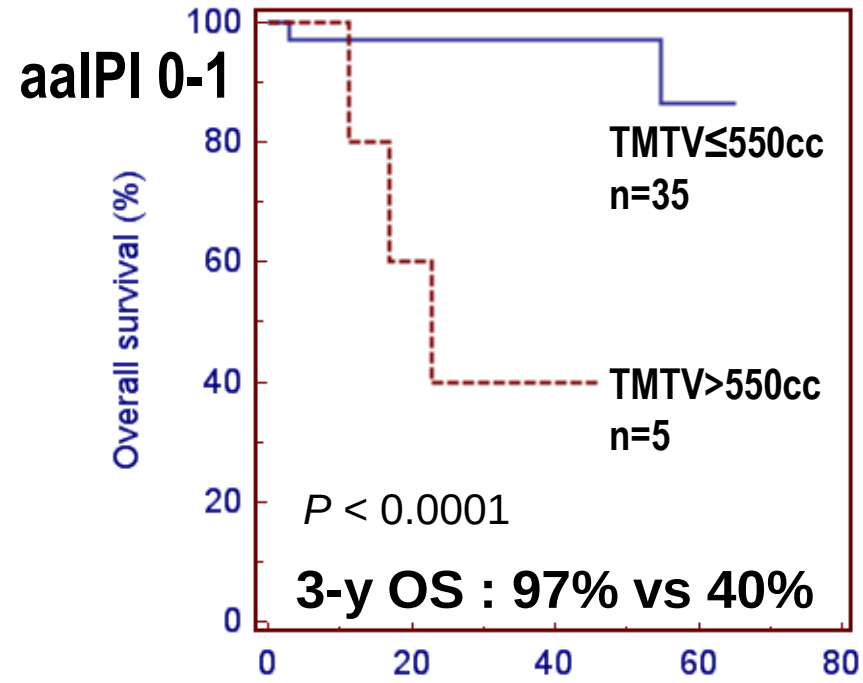
Itti et al. *Eur J Nucl Med Mol Imaging* 2014;41:*in press*

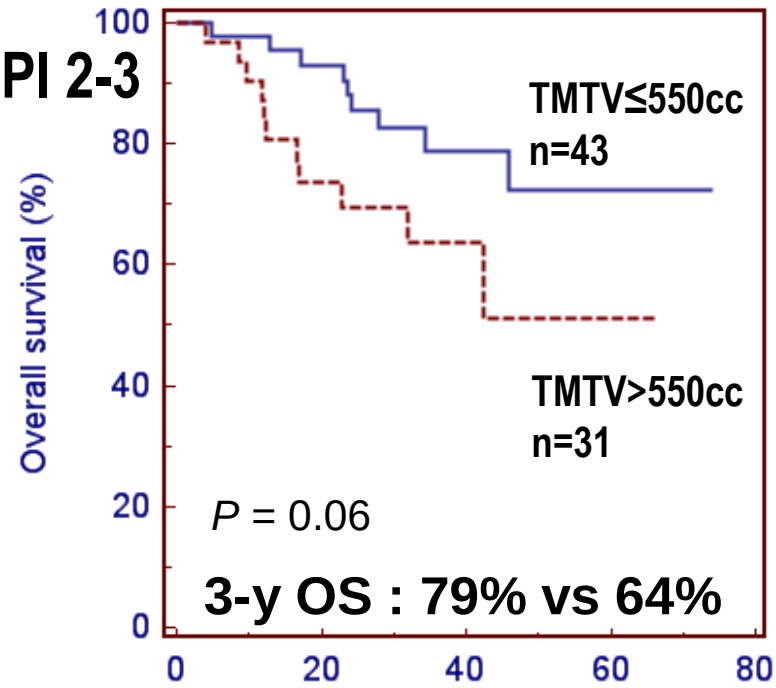

Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
TMTV≤550cc
n=78
TMTV>550cc
n=36
P = 0.0003
3-y OS : 87% vs 60%

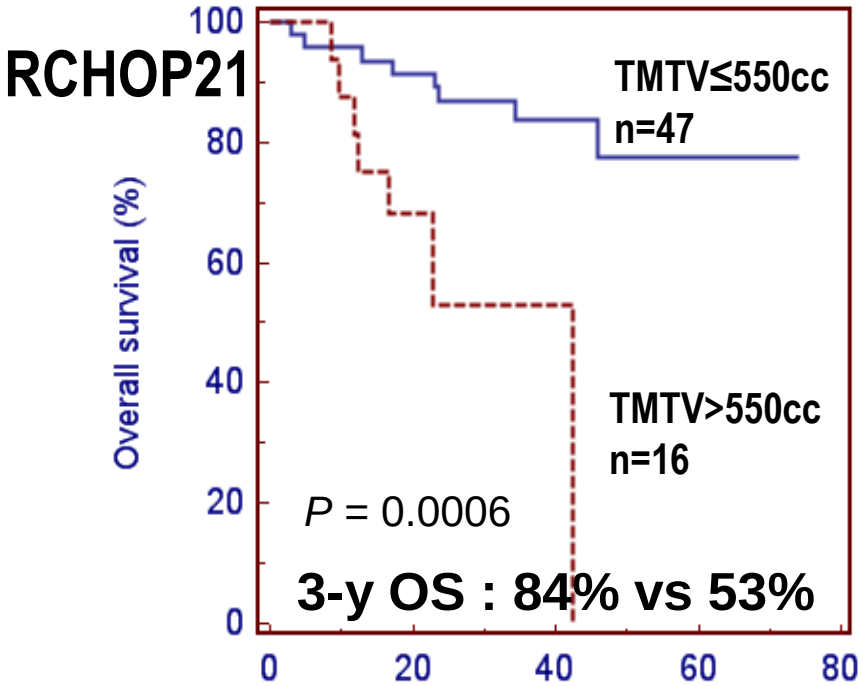

Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
TLG≤4576
n=78
TLG>4576
n=36
P = 0.005
3-y OS : 85% vs 64%

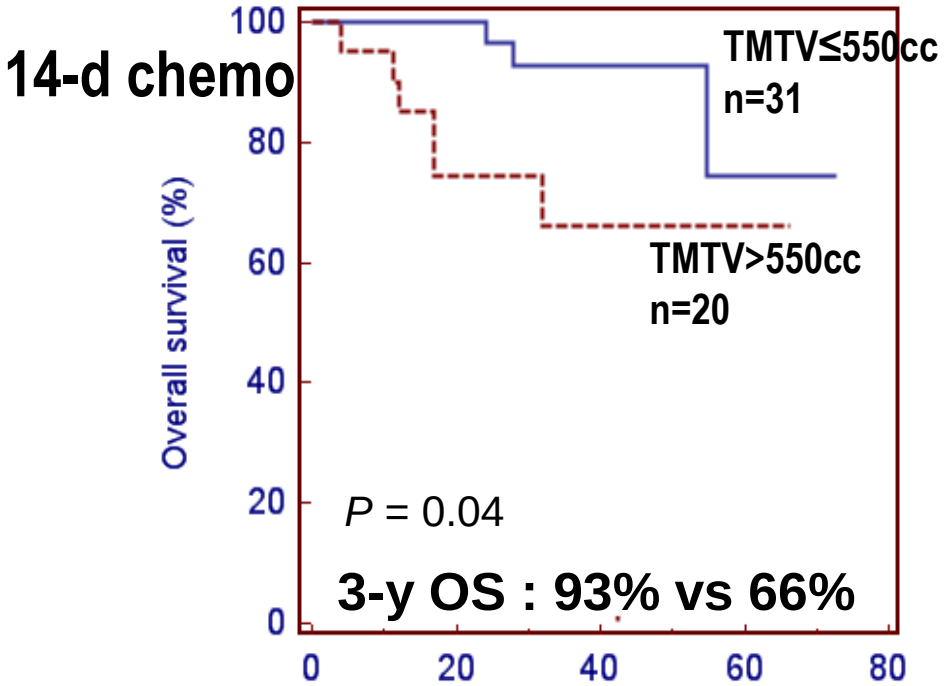

Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
93%
84%
78%
59%
P = 0.01
TMTV quartiles


Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
88%
82%
75%
69%
P = NS
TLG quartiles


aaIPI 0-1
Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
TMTV≤550cc
n=35
TMTV>550cc
n=5
P < 0.0001
3-y OS : 97% vs 40%

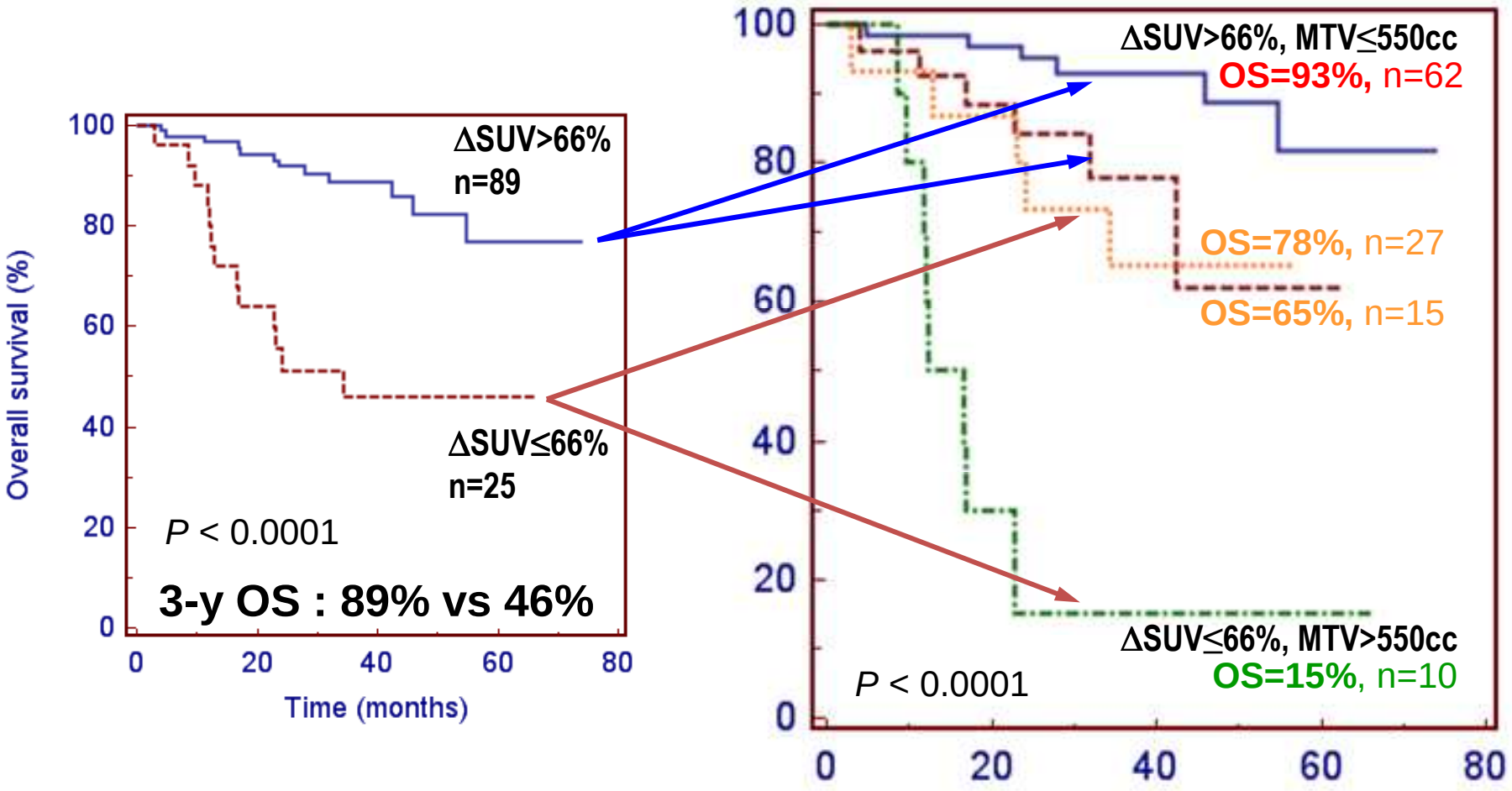

aaIPI 2-3
Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
TMTV≤550cc
n=43
TMTV>550cc
n=31
P = 0.06
3-y OS : 79% vs 64%


RCHOP21
Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
TMTV≤550cc
n=47
TMTV>550cc
n=16
P = 0.0006
3-y OS : 84% vs 53%


14-d chemo
Overall survival (%)
100
80
60
40
20
0
0
20
40
60
80
TMTV≤550cc
n=31
TMTV>550cc
n=20
P = 0.04
3-y OS : 93% vs 66%

Pre-therapy TMTV combined w/ early response

Identifies 3 risk categories



Multivariate analysis

ΔSUV_{max} is the strongest predictor

Survival time	delaiOS
Endpoint	OS

Method	Enter

Sample size	114

Overall Model Fit

Null model -2 Log Likelihood	220,43779
Full model -2 Log Likelihood	186,57625
Chi-square	33,8615
DF	7
Significance level	P < 0,0001

Coefficients and Standard Errors

Covariate	b	SE	P	Exp(b)	95% CI of Exp(b)
AnnArbor	0,2980	0,6933	0,6673	1,3471	0,3485 to 5,2067
LDH	0,2692	0,5088	0,5967	1,3089	0,4853 to 3,5299
bulk	-0,1577	0,4921	0,7486	0,8541	0,3271 to 2,2299
chimio21_14	-0,2788	0,4694	0,5526	0,7567	0,3030 to 1,8900
asct	-1,3312	0,7136	0,0621	0,2642	0,0657 to 1,0621
MTV550	1,7056	0,5141	0,0009	5,5049	2,0201 to 15,0013
deltaSUV66	1,9812	0,4594	0,0000	7,2515	2,9603 to 17,7630

Conclusions

- Metabolic tumor burden :
  - independent pre-therapy prognostic factor
  - more relevant than 1-dimensional measures of bulk
  - may help refine Ann Arbor staging?

- TMTV or TLG ?
  - different performances (TLG $\rightarrow$ Mikhaeel, Esfahani)
  - different cutoffs (Song ~200cc, Casasnovas ~700cc)
  - less predictive than rapidity of response (ΔSUV)
  - work in progress !