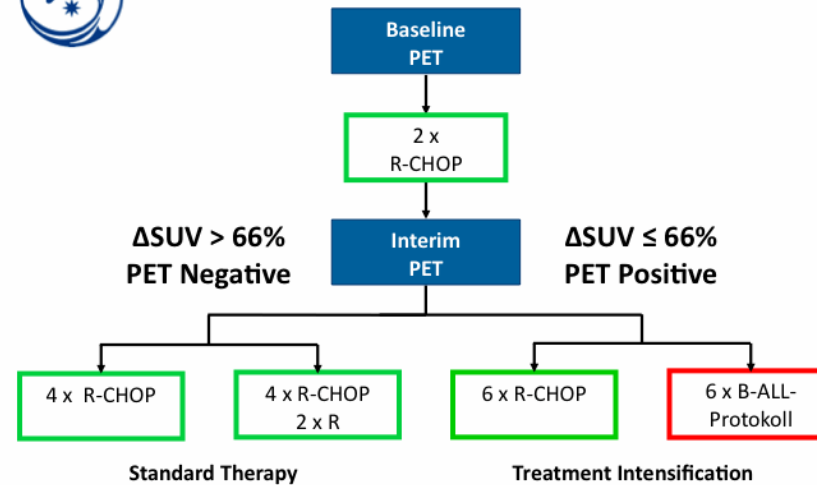


Problem



PETAL Study



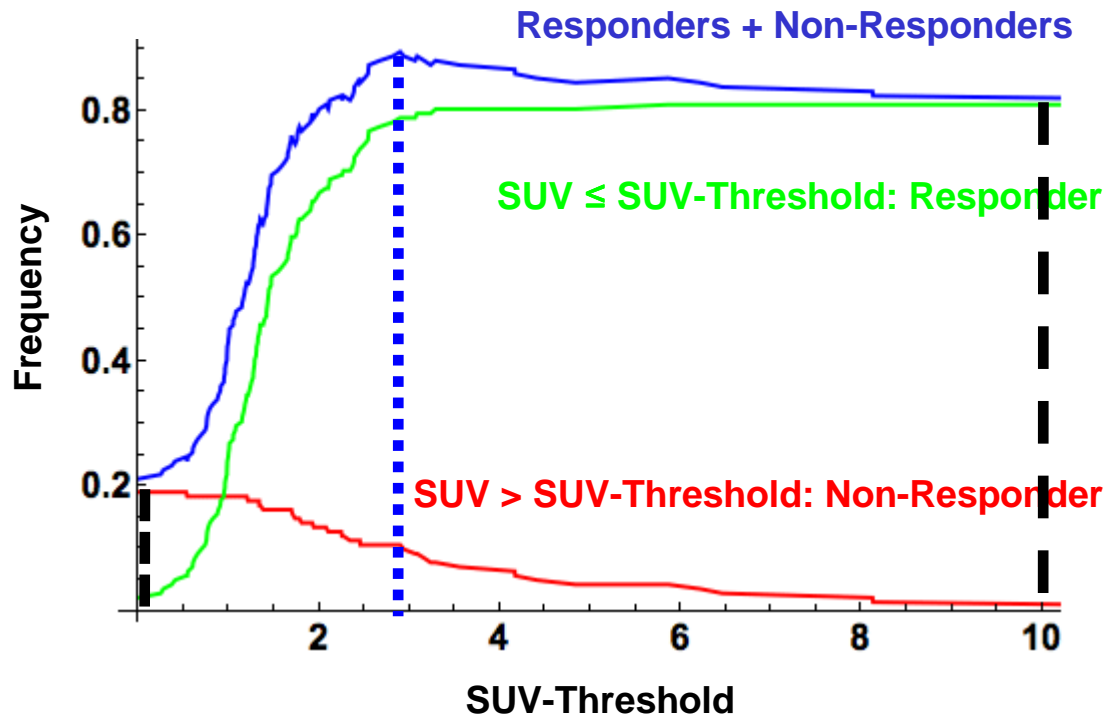
- Can we classify ΔSUV -responders without baseline PET?
- lymphoma/reference organ SUV (Interim PET) instead of SUV-Abfalls ($\Delta\text{SUV} \leq 66\%$)
- Agreement of Non-Responders using new criterion with gold standard (ΔSUV):

- Agreement_{Non-Resp} = $\frac{\text{True-Positives}_{\text{Ratio}}}{\text{Non-Responder}_{\Delta\text{SUV}}} = \text{Sensitivity},$



Optimisation of Agreement with Δ SUV

SUV-Threshold for Interim SUV Lymphoma/Liver



Low SUV-Threshold:
all pts. Non-Responders
no Responders

High SUV-Threshold:
no Non-Responders
all pts. Responders

optimal SUV-Threshold
Maximization of
Non-Responder + Responder
optimisation of accuracy

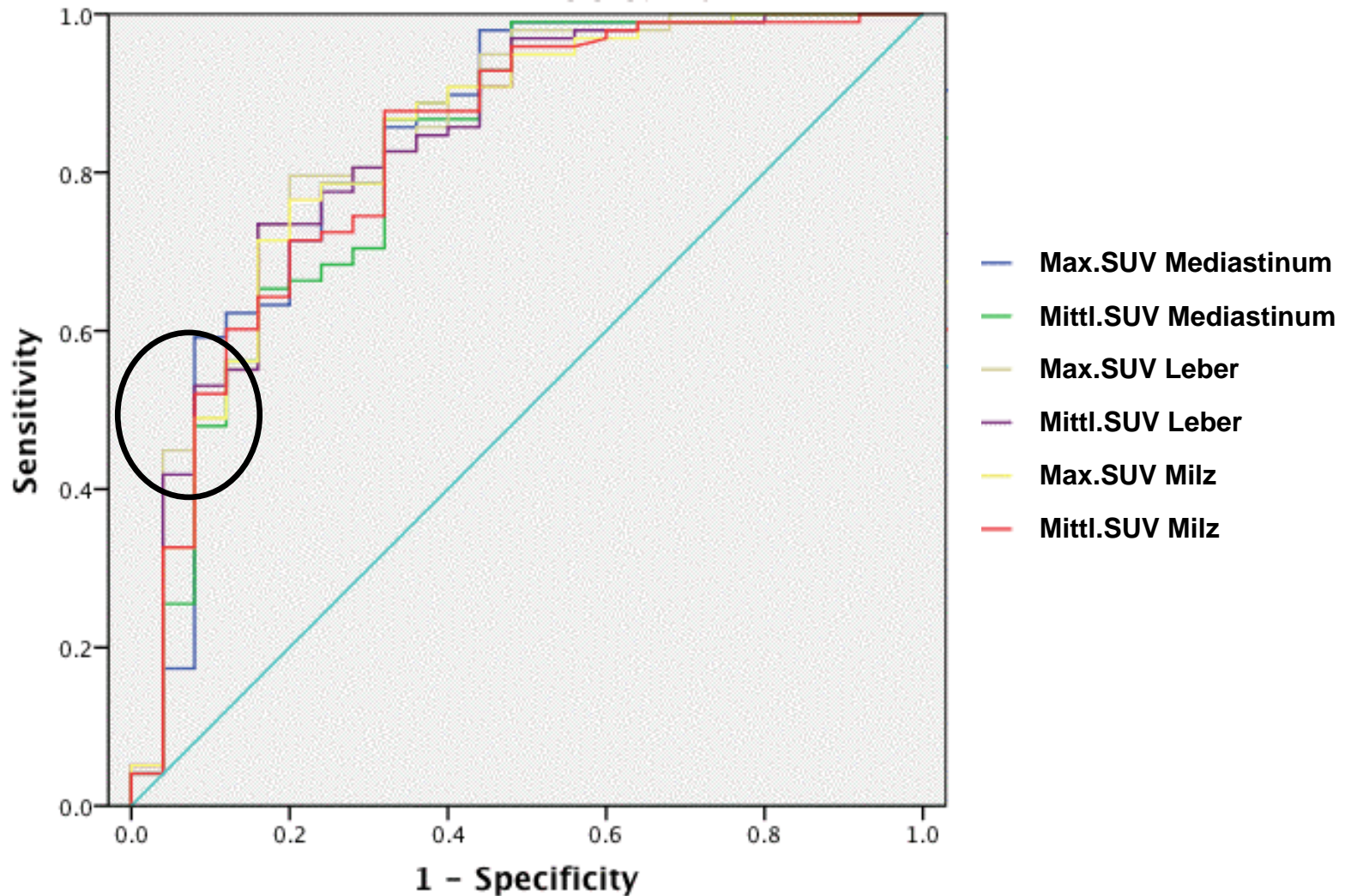
	Negative	Positive
	SUV \leq Threshold	SUV $>$ Threshold
Responders	112	3
Non-Responders	12	15

Few False-Positives

Less than half of the Δ SUV Responders identified



Agreement of Non-Responders = Sensitivity ROC Lymphoma/Organ Ratio (Gold Standard = Δ SUV)



**Agreement of Non-Responders 50 – 60%
At ca. 5 – 10% False-Positives**

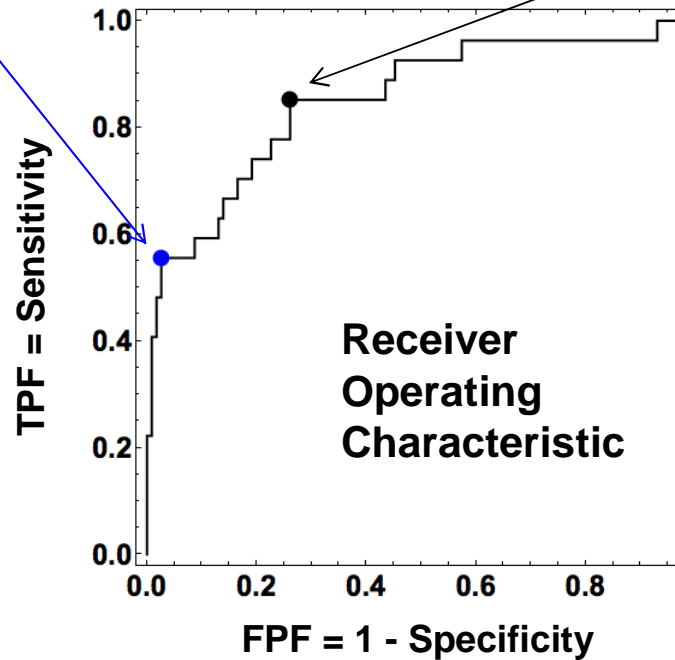
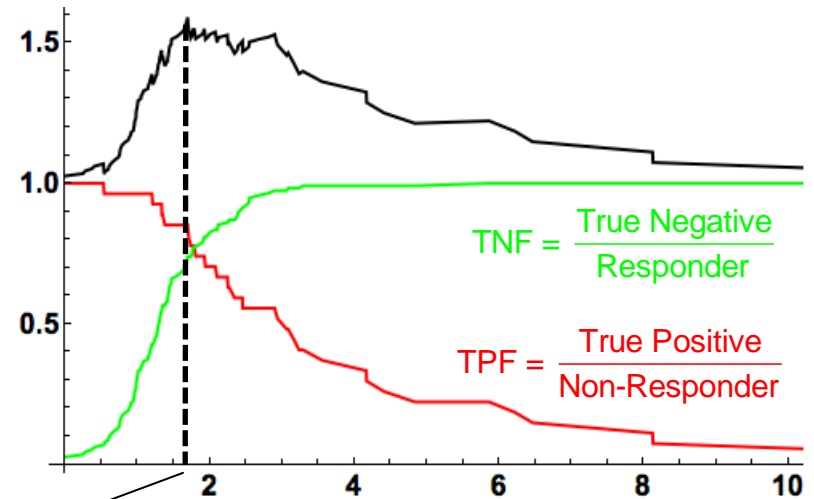
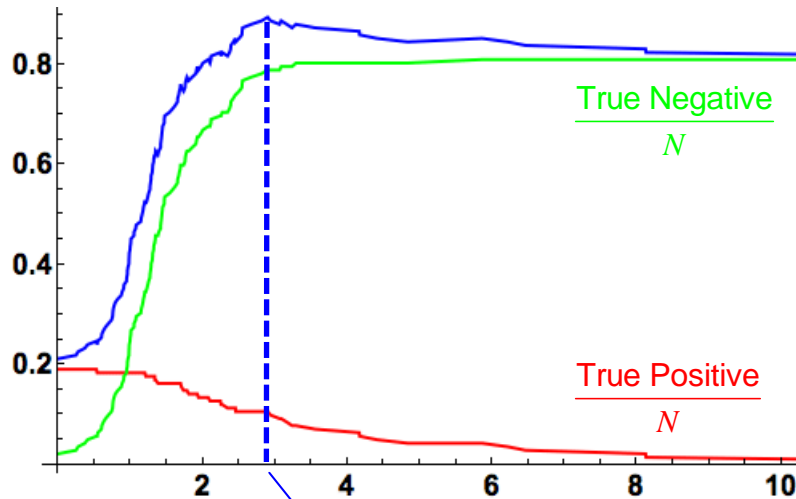


Conclusions

- Without baseline PET only every other Non-Responder will be assigned to the escalated treatment arm of the PETAL study
- Results in significantly different escalated patient group
- Outcome results from the PETAL trial not necessarily predictive for this different patient sample
- Further studies are required before dispensing with the baseline PET



Optimization of SUV Threshold and ROC



ROC curve characterizes agreement with ΔSUV for all thresholds

