

External validation of CT-attenuation indices for predicting liver steatois

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Background

Graft steatosis = risk of early allograft dysfunction(Inomata Y,et al 2000)
May be used provided selection of recipient(Tector AJ,et al 2006)
Severe steatosis = potential contraindication...(Durand F,et al 2008)

Objective

To validate on an external cohort the L/S ratio ≤ 0.9 as a predictor of moderate steatosis.
To identify independent predictors of severe macrovesicular steatosis

Methods ...

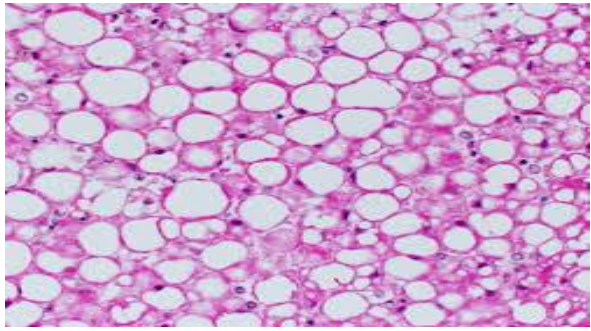
Study population

All consecutive Dead Brain Donors
January 2012 - February 2015

With available L/S ratio measurement

Liver has been procured (including both discarded and transplanted livers),
Paul Brousse Hospital. **N= 212 patients**

Retrospective analysis of liver biopsy systematically performed
before procurement
Data of donors prospectively collected in the Agence of
Biomédecine database
L/S ratio is a recently added item...



Determined by radiologists of donor hospital

End points

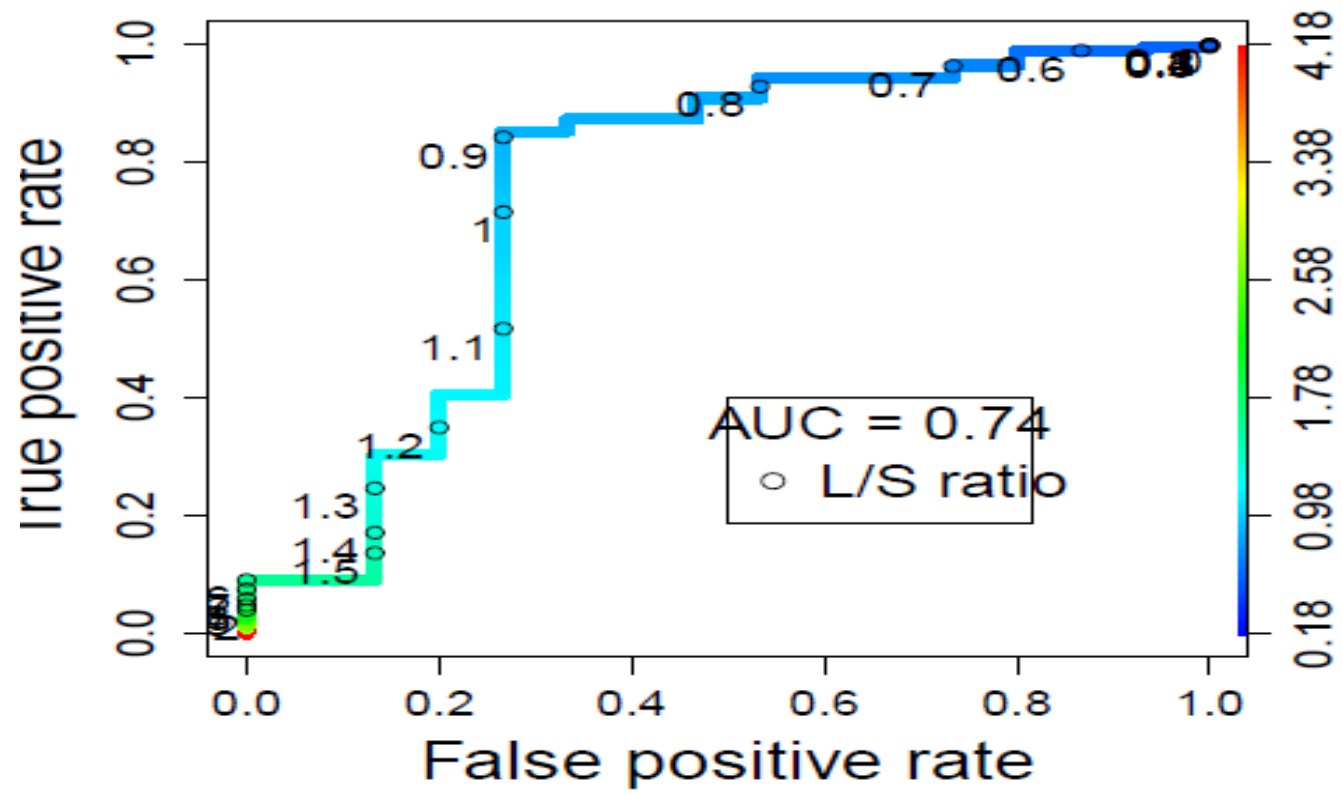
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Results

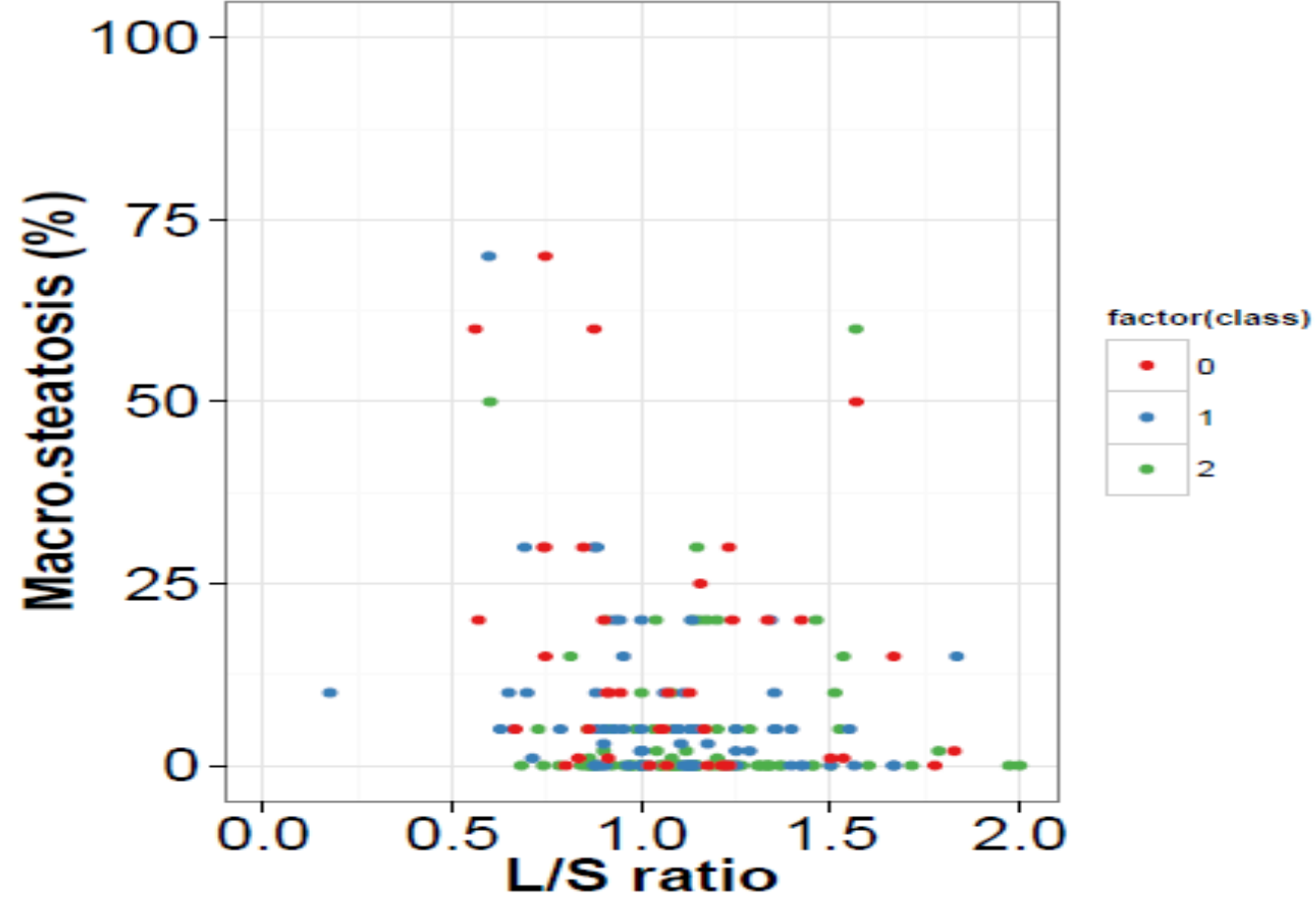
Baseline of the study population (N = 212)

Variables		No. N = 212	% or range
Sex	Female	96	45.3
	Male	116	54.7
Mean age		57.7 (± 18)	14 - 92
Mean BMI		25.7 (± 5)	14 - 44.8
BMI	< 25 kg/m ²	102	48.1
	25 - 30 kg/m ²	71	33.5
	> 30 kg/m ²	39	18.4
Macrosteatosis			
no macrosteatosis	0%	113	53.3
mild	1 - 29%	84	39.6
moderate	30 - 59%	10	4.7
severe	60	5	2.4
Microsteatosis			
no steatosis		104	49.1
mild		86	40.6
moderate		18	8.5
severe		4	1.9
Mean L/S ratio		1.2 (± 0.4)	0.18 - 4.15
L/S ratio < 0.9		45	21.2

ROC curve for moderate macro steatosis



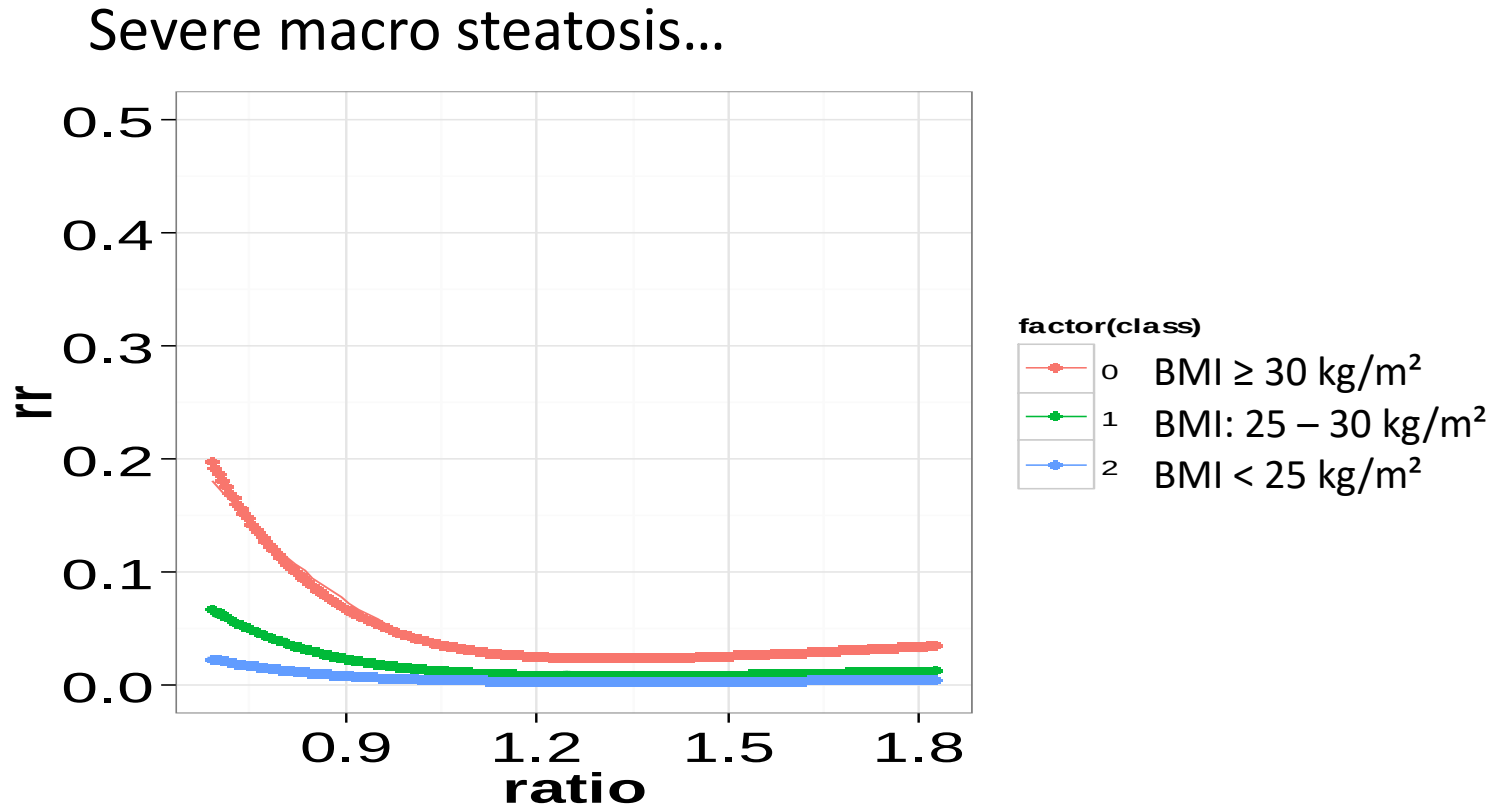
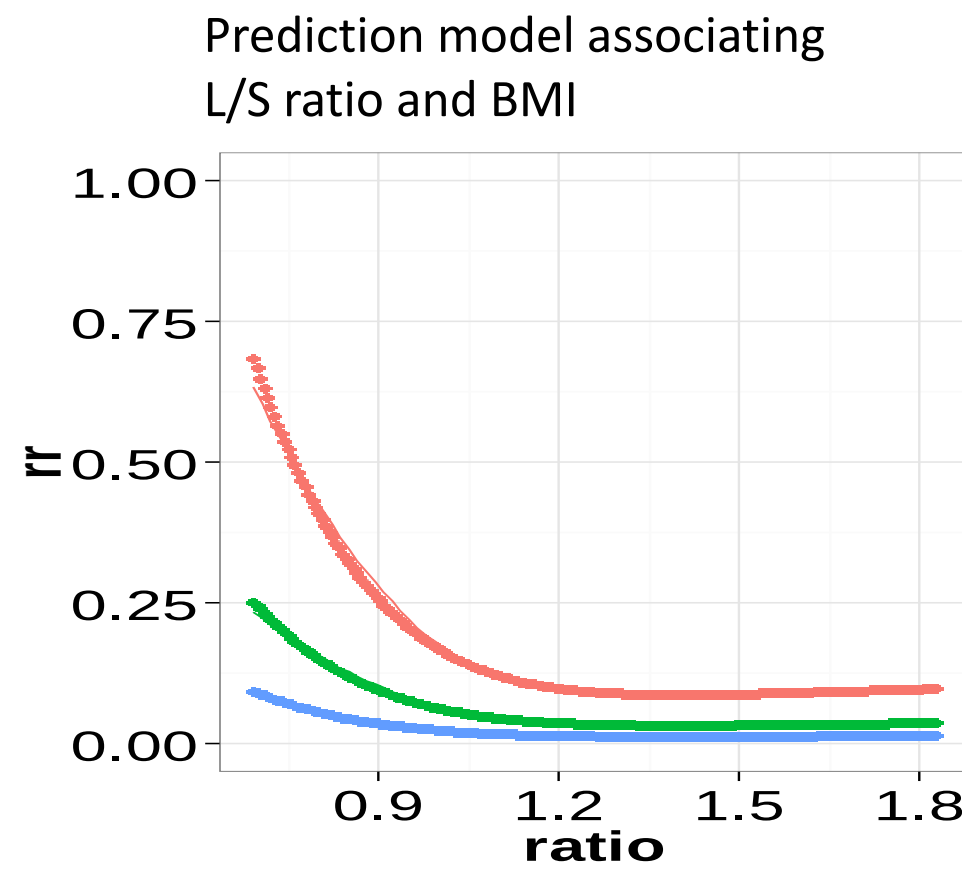
The addition of BMI?



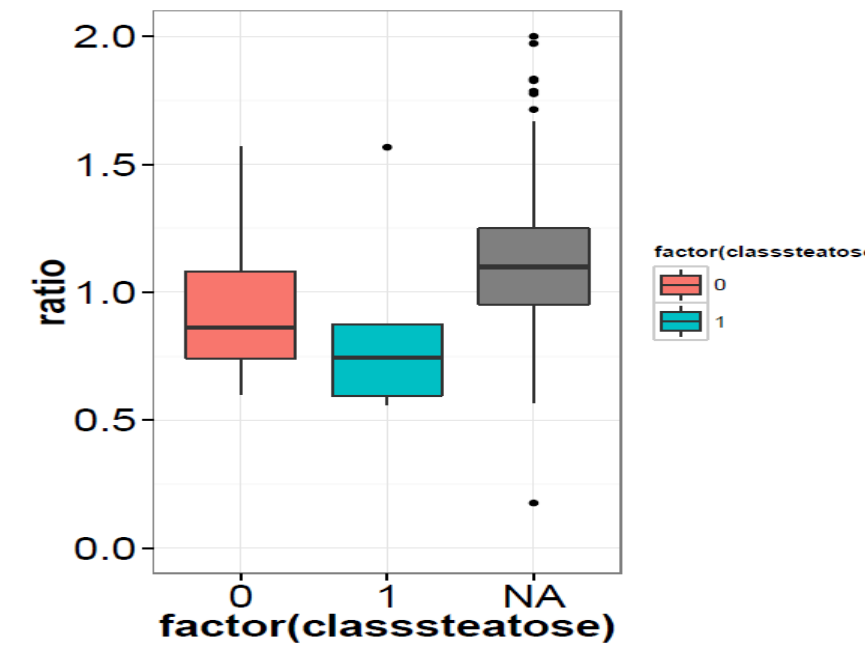
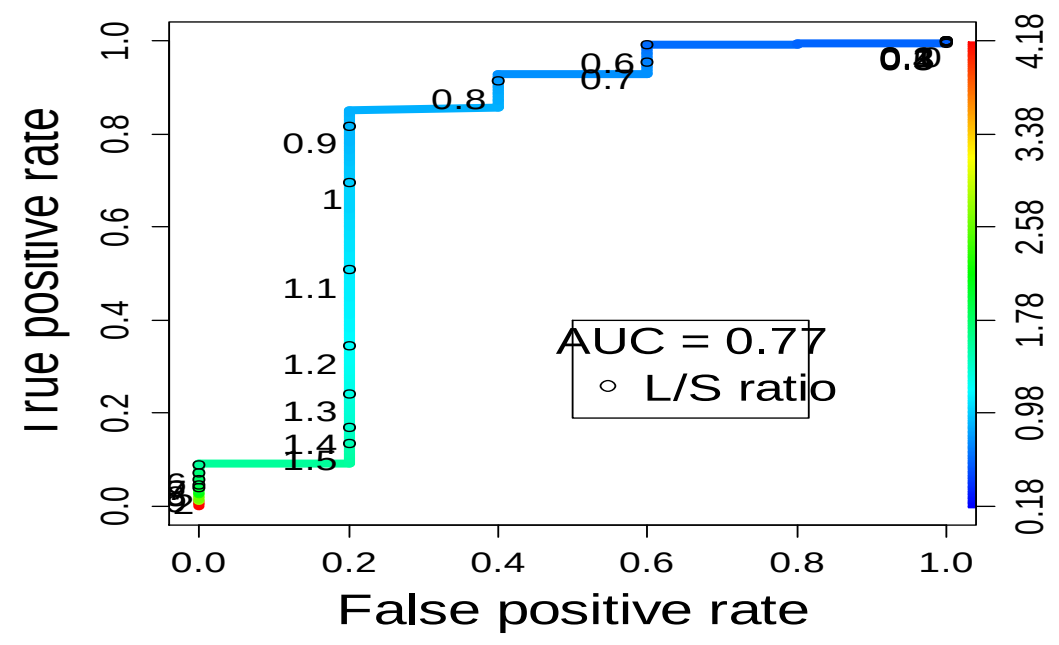
Multivariate model

Moderate macrosteatosis~ BMI (Category)+ rcs (Liver to spleen ratio,3)
C-Index (= AUC) : 0.84

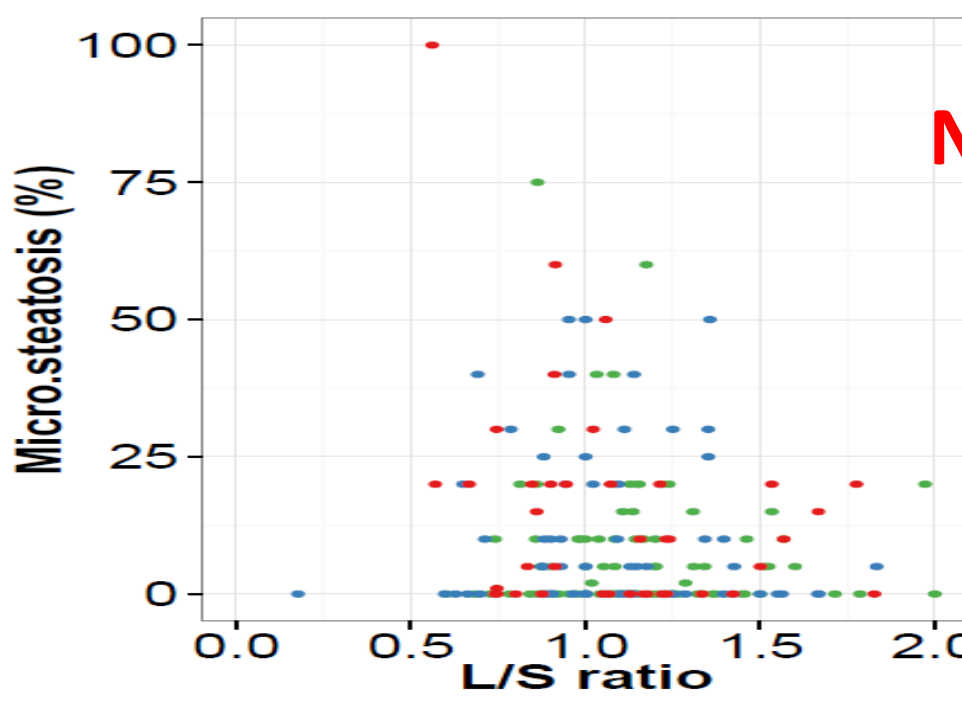
The addition of the BMI improves the model



Best cutoff is similar - 0.9



L/S ratio and microsteatosis



No significant association!!

Conclusion

External validation of the L/S ratio in routine!
The use of BMI improves the predictive value of the model
L/S ratio cannot discriminate moderate to severe steatosis!
Little relationship with microsteatosis...
Biopsy in obese patients with low L/S ratio should be considered!