

**Amel OTMANE**, Sadjia ACID, Fahima ALLANE, Mohamed MAKRELOUF  
 Biochemistry and genetic Laboratory, University hospital of BAB EL OUED/ University of Algiers, Algeria

## BACKGROUND

Visceral adipose tissue is a regulating tissue of lipid metabolism, but it plays a major endocrine role by the secretion of adipocytokines, and controls insulin sensitivity.

## OBJECTIVES

The aim of this work is to evaluate TyG index (Triglycerides-glucose index) as a marker to diagnose metabolic syndrome (MS) in comparison to HOMA (Homeostasis Model Assessment) and QUICKI (Quantitative insulin sensitivity check index) in type 2 diabetic patients.

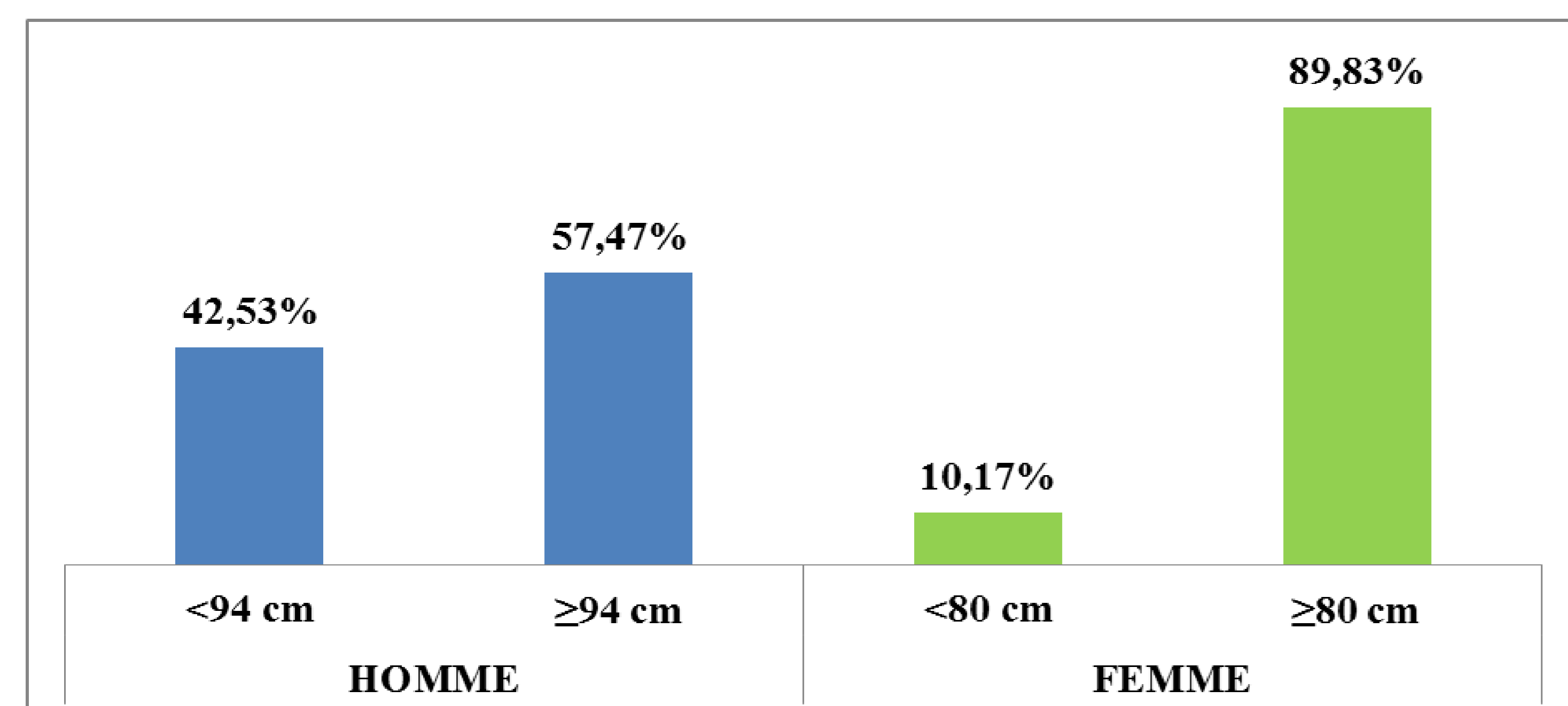
## METHODS

It is a prospective and cross-sectional study, which includes 205 type 2 diabetic patients (118 women, 87 men), of average age 55.56 (8.79) years. All the patients we evaluated using a questionnaire their anthropometric data, in fasting venous blood their lipid profile, glycaemia, HbA1c, uric acid and evaluation of insulin resistance by 3 indexes: HOMA, QUICKI and TyG, coupled with weight, BMI and waist circumference.

We measured Insulin was chemiluminescence. Finally, ROC curve analysis was carried out to measure AUC (Area Under Curve) for these parameters to determine their performance.

N=205	HOMA - QUICKI	TyG - QUICKI	TyG - HOMA	TyG - TG/HDLc	HOMA - TG/HDLc	QUICKI - TG/HDLc
p-value	0,000	0,000	0,000	0,000	0,433	0,000

## Abdominal obesity (TT)



## RESULTS AND DISCUSSION

The prevalence of metabolic syndrome according to IDF were 56.59%, with a predominance in women (66.3%).

In our series, 59.2% of patients had T2DM <5 years, we observe that 45.37% of patients are overweight, 35.61% are obese and 38% of them are sedentary. For glycemic control, 48.3% have an HbA1c > 7%. According to the prescribed treatment, 67.8% of our patients are on Biguanides, 11.48% on sulfonamides, 18.54% on dual therapy, The estimated insulin resistance is 56.10% according to the HOMA index, 20% according to the QUICKI index and 70.24% according to the TyG index.

Comparison of the 3 indexes showed a statistically significant difference (p < 0.001). However, depending on the glycaemic control, a significant difference was observed for the QUICKI index (p = 0.013) and TyG (p < 0.001).

A strong negative and significant correlation was observed between the HOMA index and QUICKI (r = -1.000, p < 0.0001), a positive and significant correlation between HOMA and TyG (r = 0.384, p < 0.0001).

For the ROC curve, the AUC was (0.696) for the TyG index, (0.639) for the HOMA followed by the QUICKI (0.361).

## Comparison between indexes according to MS

indexes	With MS N=116	Without MS N=89	p
HOMA-IR	4.15 (3.32)	3.02 (2.95)	<b>0.001</b>
QUICKI	0.33 (0.04)	0.35 (0.04)	<b>0.001</b>
Indice TyG	9.31 (0.54)	8.94 (0.66)	<b>0.000</b>
TG/HDLc	4.38 (2.96)	3.18 (3.25)	<b>0.000</b>

## CONCLUSION

In our series, the preliminary results suggest that there is a, differences for the prevalence of insulin resistance estimated by the 3 indexes. TyG index is associated with the metabolic syndrome, while hyperinsulinism is better evaluated by the HOMA index,

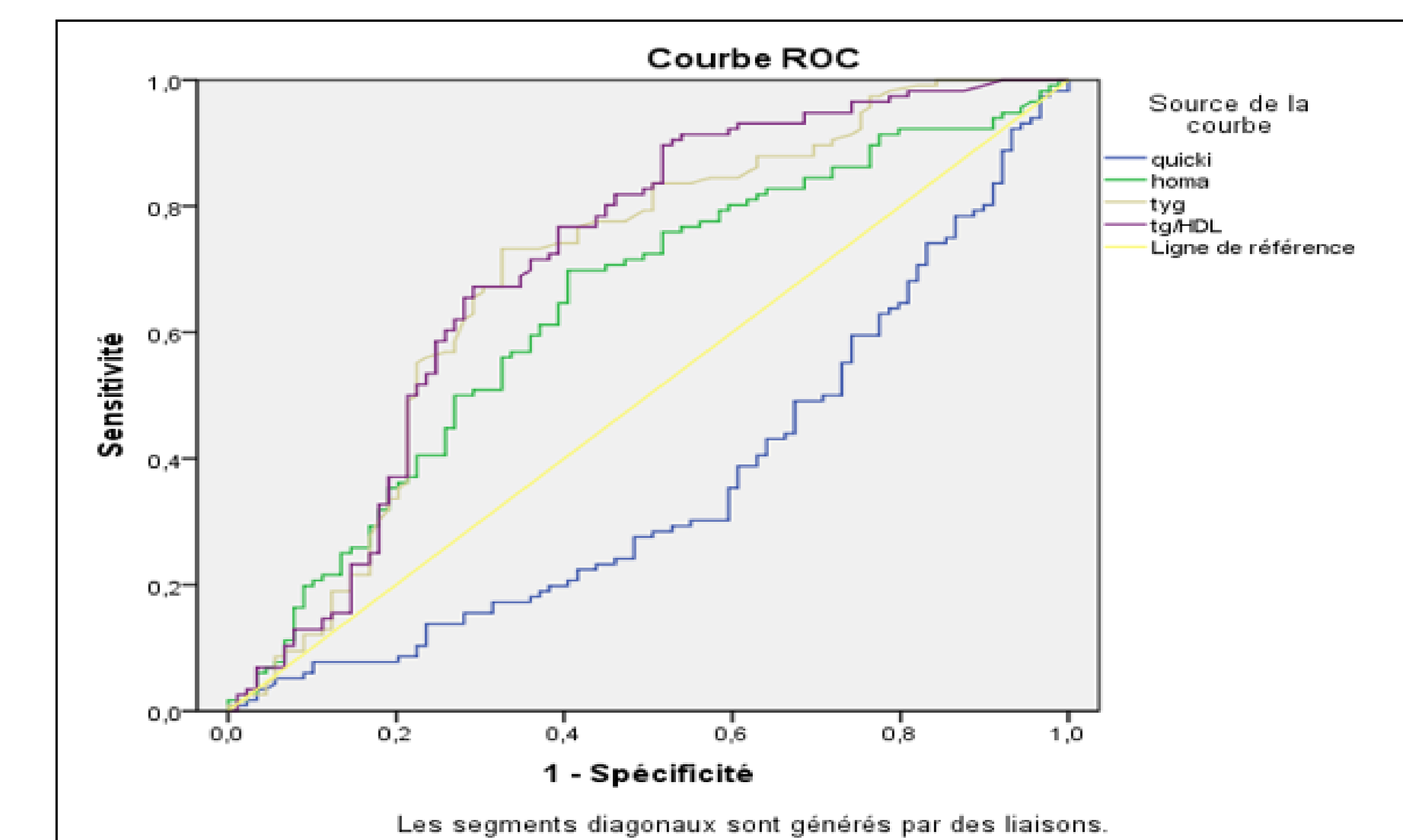
In our series, we observed that TyG index has the highest AUC in comparison to HOMA and QUICKI, it can be a better marker for diagnosing metabolic syndrome in type2 diabetic patients.

In diabetic patients, hence the importance of taking care of the patients, by good sensitization, and a good tracked by referring to simple indices such as the TyG index and the TG / HDLc ratio.

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## ROC curve according to MS



Courbe ROC des indices d'IR en fonction du sMet.

N=205 (Rho de Spearman)		HOMA	QUICKI	TyG	TG/HDLc
TT	r	0,309	-0.310	0.183	0.148
	p	<b>0,000</b>	<b>0.000</b>	<b>0.009</b>	<b>0.035</b>
HbA1C	r	0,146	-0.149	0.440	0.230
	p	0,036	0.034	<b>0.000</b>	<b>0.001</b>
IMC	r	0,219	-0.218	0.105	0.096
	p	<b>0,002</b>	<b>0.002</b>	0.133	0.173