

Introduction

Type 2 diabetes is one of the most common NCDs in the world. Obesity is the main risk factor for type 2 diabetes, its causes that increase diabetes. These two diseases are responsible for a significant increase in morbidity and mortality.

The aim of our study was to determine the prevalence of diabetes and fasting hyperglycemia in the general population and to compare this prevalence in obese and non-obese.

Methodology :

This is a descriptive cross-sectional study and analytical conducted among a sample of residents of the province of Algiers . The target population consisted of subjects aged between 18 and 64 years old of both sexes living in the wilaya of Algiers .The diabetes is defined by blood glucose > 1.26 g / l in fasting blood sugar twice or > 2 g / l whatever the time of day . The IFG is defined as fasting glucose between 1.10 and 1.26 g / l.

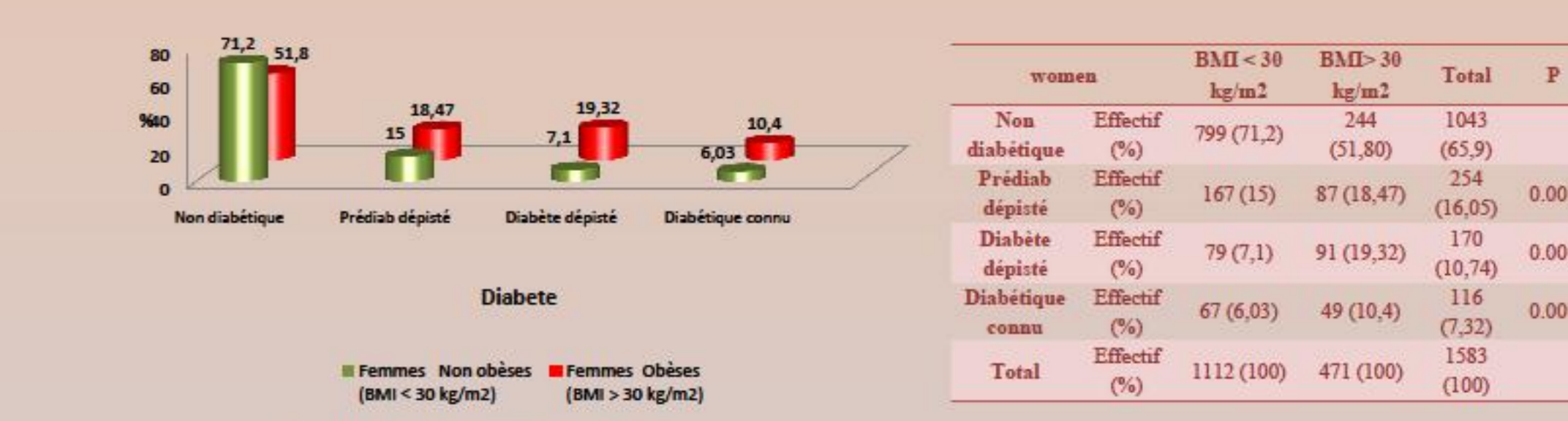
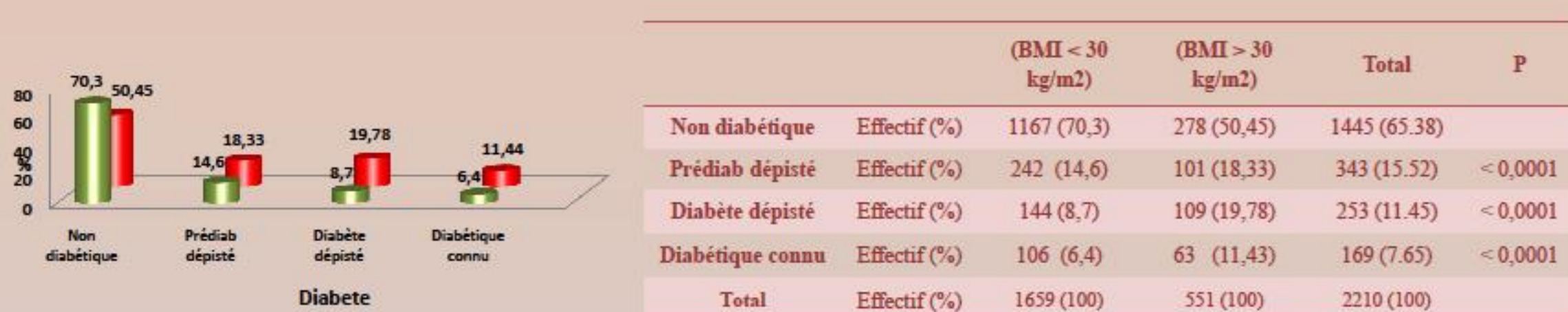
Results :

Our survey covered a sample of 2210 individuals (1583 women and 627 men). The average blood glucose is 1.023 g / l (0.24 to 1.8) .

- A moderate fasting hyperglycemia was found a prevalence of 15.52 %.

- A history of known diabetes are found in 7.65 % of individuals.

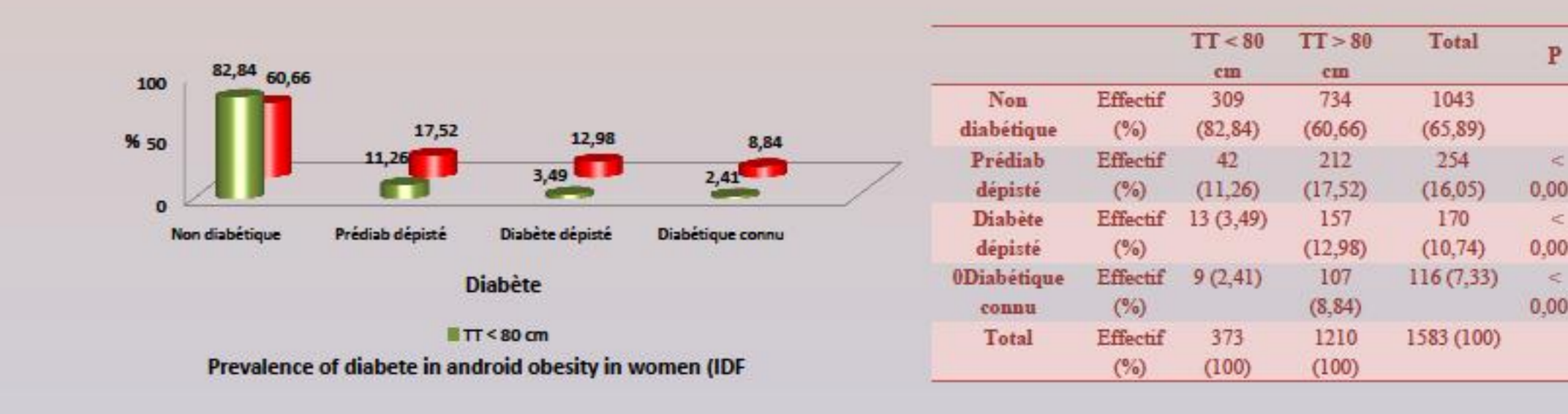
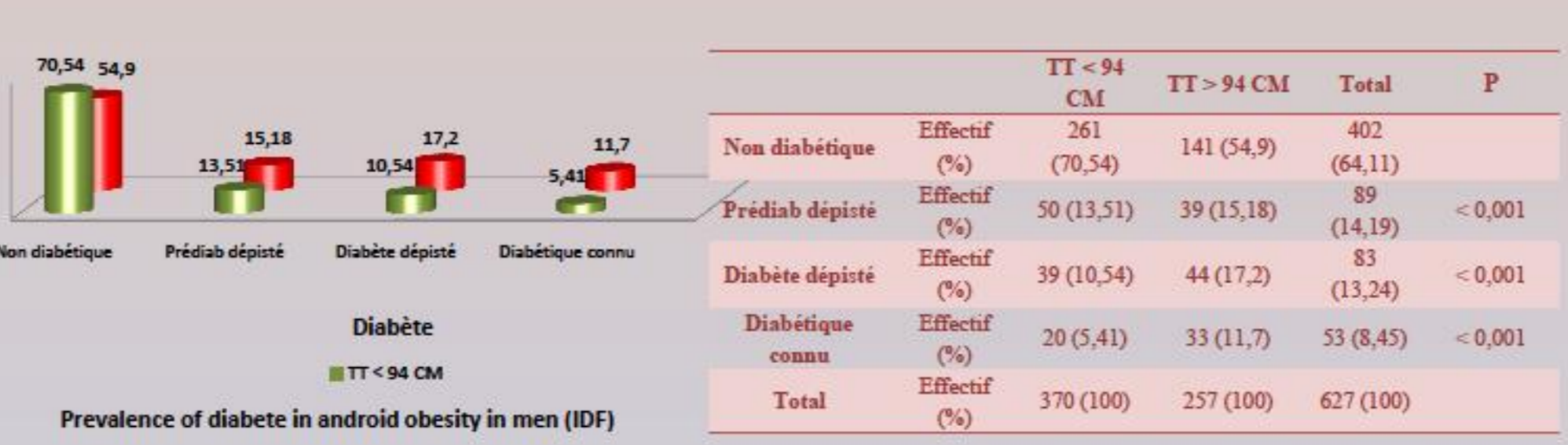
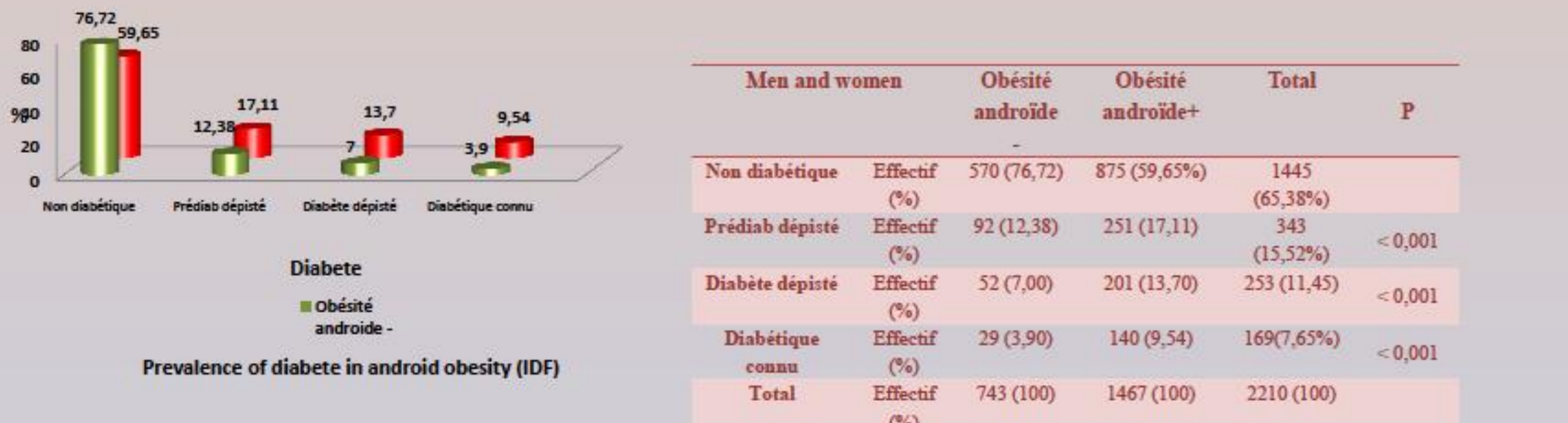
- Diabetes mellitus was detected in 11.45 % of the representative sample.



The obese have prevalence rates significantly higher diabetes compared to non obese. We found a prevalence of prediabetes detected 18.33 % of obese versus 14.6% in non-obese (<0.0001), diabetes detected 19.78 % of obese versus 8.7 % among non-obese (<0.0001) and a prevalence of known diabetes of 11.45 % among obese versus 6.4 % among non-obese (<0.0001).

We find here also prévalences tracked rates of prediabetes , diabetes and detected significantly higher known diabetes obese men compared with non-obese men (<0.001).

Prévalences rates of prediabetes detected , the detected diabetes and known diabetes are also found significantly higher in obese women compared to non-obese women (<0.001).



In individuals with android obesity (IDF) we found that the prevalence of diabetes significantly higher compared to non-obese. We found a prevalence of prediabetes detected 17.11 % of obese versus 12.38% in non-obese (<0.0001), 13.70% of the detected diabetes in obese versus 7% for non-obese (<0.0001) and a prevalence of known diabetes of 9.54 % among obese versus 3.90% in nonobese (<0.0001).

In men with android obesity (IDF) prévalences the rate of prediabetes detected , the detected diabetes and known diabetes were significantly higher compared to non-obese men (<0.001).

In women with abdominal obesity (IDF) the prevalence rate of diabetes pre detected , the detected diabetes and known diabetes were significantly higher compared to non-obese women (<0.001).

Discussion :

The prevalence of the glucose tolerance disorders were significantly higher in obese (overall obesity and android IDF) compared to non- obese, with a male predominance . This difference is noted for the detected diabetes and prediabetes in overall obesity and android.

Multivariate analysis of overall obesity (BMI > 30kg / m2) shows that the known diabetics are more obese than non-diabetics : OR 1.17 (95% CI 0.77 to 1.78) p = 0.471 . The pre diabetic and diagnosed with diabetes during our survey are more obese than non-diabetics. Pre diabetes : OR = 1.4 (95% CI 1.04 to 1.87) p < 0.02. Diabetics screened : OR = 1.4 (95% CI 1.67 to 3.17) p < 0.001

About android obesity (IDF criteria) the same observation is made for known diabetics than overall obesity OR = 1.22 (95% CI 0.66 to 1 , 188) p > 0.05. For detected diabetics pre- we have not found that they were more at risk for obesity than non-diabetic android OR = 1.25 (95% CI 0.91 to 1.72) p > 0.05 Unlike diagnosed with diabetes OR = 1.62 (95% CI 1.68 to 2.42) p = 0.018 .

The fact that the known diabetics are not more obese than non-diabetic can probably be explained by the fact that the known diabetics often diet and therapeutic (biguanide) often for weight loss . The duration of diabetes was not analyzed .

The link between diabetes and obesity was highlighted by our national studies and studied by international studies. The STEPWISE study reported in subjects with general obesity prevalence of diabetes 8.7% in men and 12.1 in women.

For people with central obesity (TT / TH) rates were 18.8 % for men and 12.3% among women. In TAHINA study the prevalence of diabetes was 18.5 % for men and 17.76 % women. In individuals with abdominal obesity rate was 15.27% (16.84 % for men versus 14.56 for women) for the IDF and 17.4% (15.75 % of men and 16 96% of women) for ATP III . A Tlemcen, YAHIA - BEROUIGUET found a prevalence of 20.7% diabetes in subjects with abdominal obesity (NCEP -ATP III) and 13.4 % among people with general obesity.

Internationally multiple studies have shown that obesity was a powerful risk factor for type 2 diabetes In a 2009 study that followed a cohort of 12,814 white and African American subjects Stevens reported that waist circumference , BMI and WHR were equivalent in their ability to predict diabetes type2.Pour android obesity thresholds 102 cm (H) , 88 cm (F) for waist circumference and 0.95 (H) , 0.88 (F) to hip circumference waistline report were recommended by the American Heart Association, thresholds of 94 cm (H) and 80 cm (F) have been proposed by other authors .

Wang. Y et al followed a large cohort of men (27270) for 13 years for incidence of diabetes and has demonstrated that the three parameters (TT , BMI , WHR) were significant predictors of the risk of type 2 diabetes, even after adjusting on other potential confounding variables.

In this cohort of men, it was found that overall obesity and central adiposity predict risk of type 2 diabetes , but the waist seemed to be a better predictor than BMI or WHR . Several other studies also advocated the use of TT in clinical practice rather than WHR , as they have demonstrated a strong association between the TT and the cardiovascular and metabolic risk.

The investigations also showed that the TT was a better predictor of visceral fat assessed by CT and photon absorptiometry bi the WHR . In addition the extent TT is simpler than the WHR and is also subject to fewer measurement errors.

Finally, the biological mechanisms of the association between WHR and cardiometabolic risks are more difficult to explain than the TT . But controversies remain on waist circumference thresholds that should be used in clinical practice , as these thresholds are arbitrary knowing that the risk of type2 diabetes is an ongoing process .

In these studies , subjects with both a high BMI and high waist circumference had twice the risk of type 2 diabetes than BMI alone or if the only waistlines were high. Although BMI and waist circumference are highly correlated, they measure different aspects of body fat.

BMI suggests the overall fat distribution but does not separate lean mass fat mass while waist circumference assess abdominal fat. Finally an analytical transversal study in 1797 subjects (941 M and 856 F) aged between 25 and 65, aimed to evaluate the association between the TT and fasting glucose has shown a positive correlation between the TT and fasting glucose

Conclusion :

Obesity plays a key role in the pathophysiology of type 2 diabetes, early treatment of obesity is essential in the prevention and treatment of type2 diabetes.

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