



LABORATORY OF RESEARCH ON DIABETES

مختبر بحث سكري
« LAREDIAB »

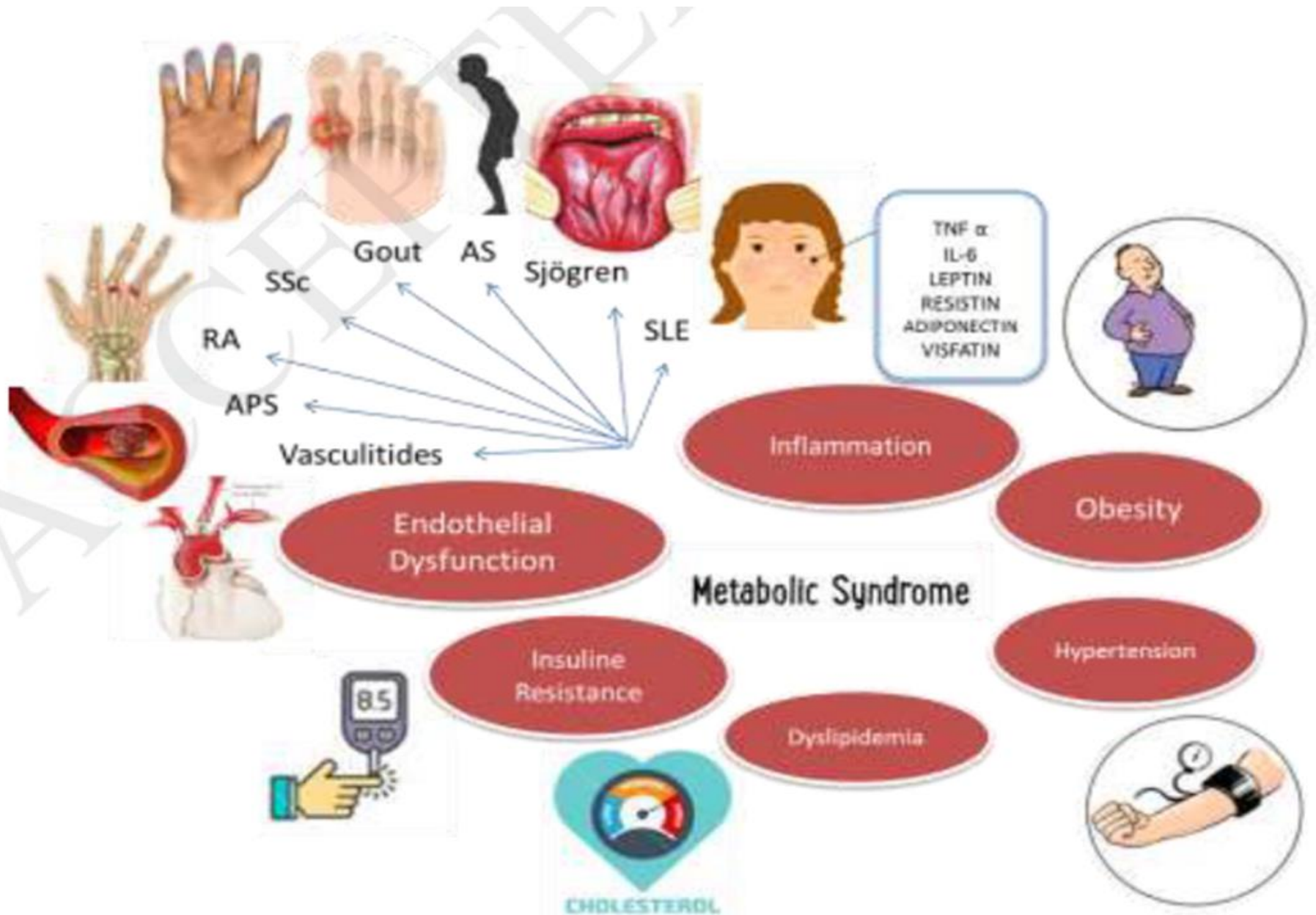
prevalence and impact of insulin resistance in autoimmune disease

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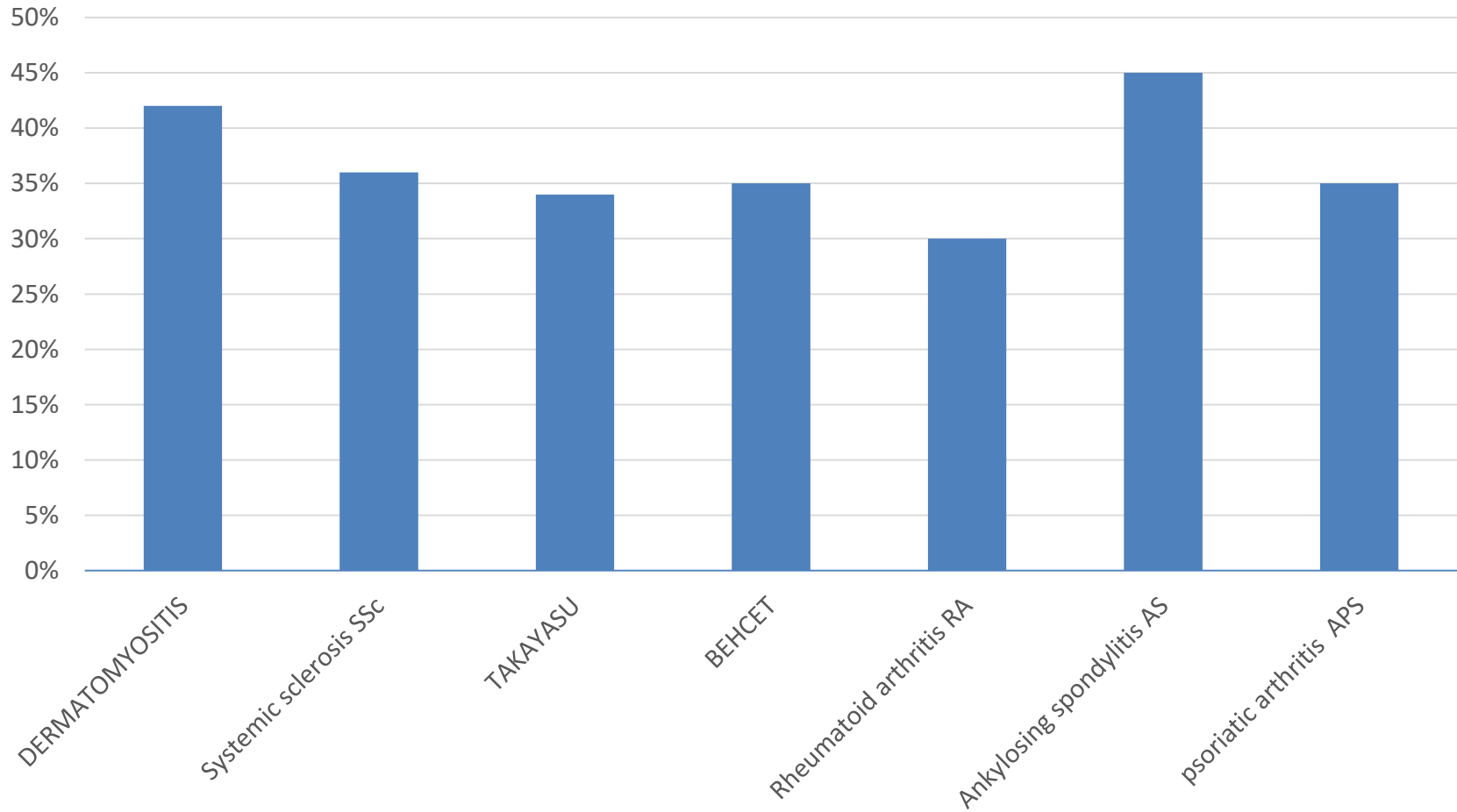
Metabolic syndrome (MetS) is defined according to the (Alberti et al. 2009) the clinical diagnosis requires the presence of at least 3 criteria out of the following 5 criteria:

1. *Waist circumference* > 102 cm in men and > 88 cm in women)
2. hypertension (systolic BP \geq 130 mmHg or diastolic BP \geq 85 mmHg or antihypertensive treatment)
3. fasting blood sugar \geq 1.00 g / l
4. triglycerides \geq 1.5 g / l
5. high density lipoproteins 0.4 g / l in men and 0.5 g / l in women, or lipid-lowering treatment

Those Criteria guide us to diagnosis the Insulin resistance (IR) , and Homeostasis model assessment (HOMA2-R) which is used to quantify IR and beta cell function (Matthews et al. 1985).

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The prevalence of MetS in auto-immune diseases



(Maia et al. 2017)(Haroon, Rafiq Chaudhry, et Fitzgerald 2016; Medina et al. 2011; de Moraes et al. 2013; Müller et al. 2017; Parker et al. 2015; Peralta-Amaro et al. 2015)

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- The targeted biological and non-biological treatments known as a (DMARDs), for the treatment of inflammatory arthritides (RA, AS & PsA , SS, SSc & LES).

- some treatments increase the IR such as glucocorticoid and (Anti-IL1-b) (Mandrup-Poulsen, Pickersgill, et Donath 2010; Nicolau et al. 2017; van Raalte et al. 2011)

the glucocorticoid reduce the sensitivity to insulin in the liver and muscles , and alteration of secretion of insulin , (van Raalte et al. 2011).

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- Hydroxychloroquine (HCQ) improved insulin sensitivity in obese patients with IR (Mercer et al. 2012; Rempenault et al. 2018).
- methotrexate therapy due to the decreases the inflammation and improve insulin sensitivity by increasing the level of adenosine in the extracellular also increasing of action of metabolism and insulin on glucose transport (Nicolau et al. 2017; Perdan-Pirkmajer et al. 2016; Pilla et al. 2016; Solomon 2011)

- Anti tumor necrosis factor alpha (Anti-TNF), reduced the IR on systemic inflammation and slightly reduced, especially in RA, (Chen et al. 2015; van den Oever et al. 2020; Wasko et al. 2011)
- Anti-IL-6 has favorable effect on glucose control that leads to improve the IR (Ogata et al. 2011:1).

Study aims :

1. Determine the prevalence of IR in Autoimmune disease
2. Evaluate the impact of treatments background on IR
3. Evaluate the impact of IR on disease activity

General design

The prospective cohort study during 18 months , included 68 adult patients (aged ≥ 18) from Tlemcen Algeria with autoimmune diseases were diagnosed and monitored in Department of Internal Medicine at Medical Center of University of Tlemcen, and well documented by diagnostic criteria specific to each pathology.

ELIGIBILITY CRITERIA

The Inclusion Criteria :

- adult patients (aged ≥ 18)
- Criteria for Clinical Diagnosis of the Metabolic Syndrome (Alberti et al. 2009)
- HOMA2 Calculator
- Autoimmune disease
(RA , AS, PsA, SLE, systemic vasculitis's and SS)

exclusion criteria

we excluded the Patients with IR without autoimmune disease

Outcome Measures

1- Primary Outcome Measures include

➤ **Clinical** : Anthropometric measurements : blood pressure measures (mmgH) waist circumference

➤ **Biological** :

1. Fasting blood sugar (FBS)
2. Triglyceride(TG)
3. high density lipoproteins (HDL)
4. insulinemia

2- Secondary Outcome Measures include:

1-Rheumatoid arthritis (RA)

2- Psoriatic arthritis (PsA)

4- The Systemic lupus erythematosus (SLE):

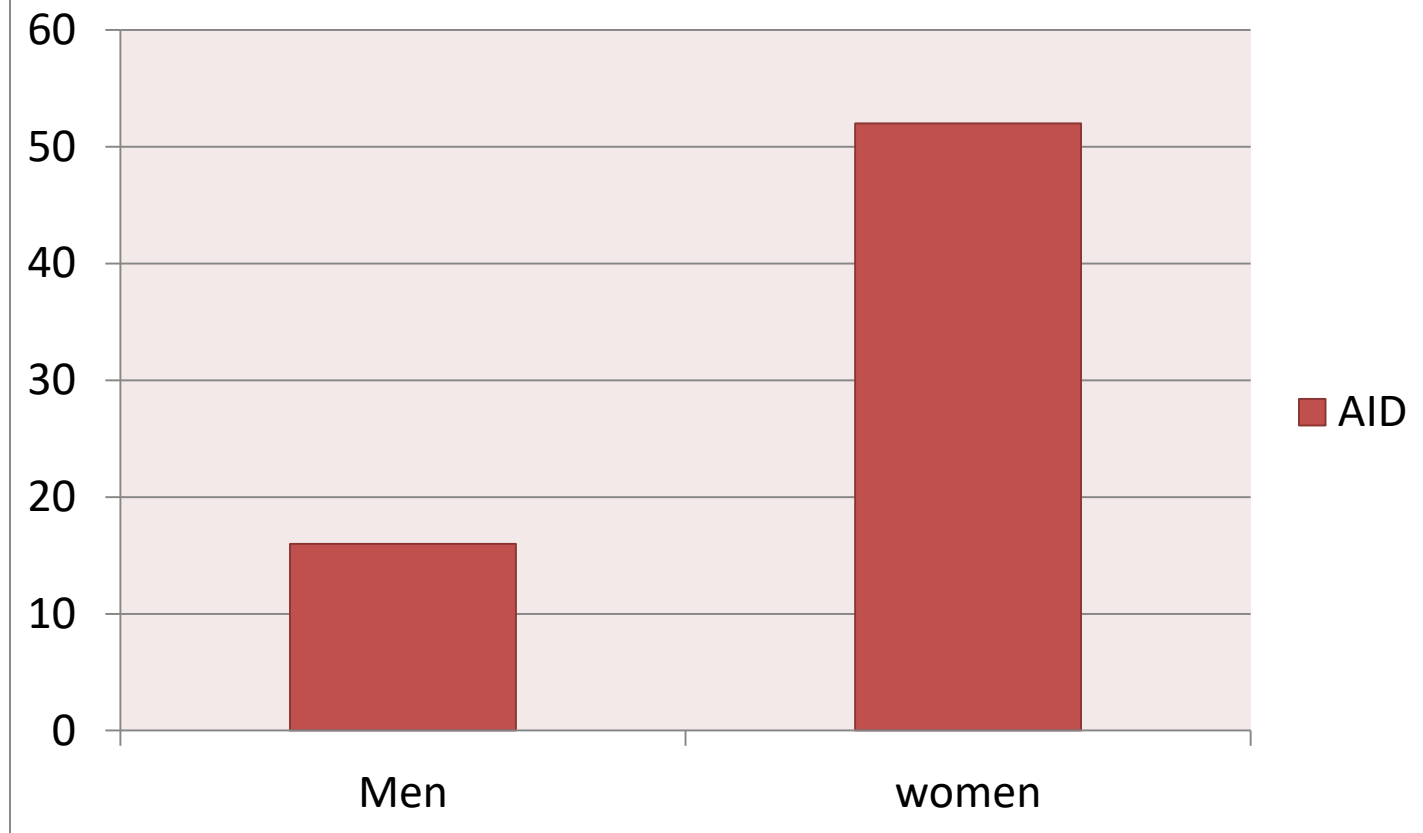
5- The Systemic Vasculitis :

6 - Systemic sclerosis (SS):

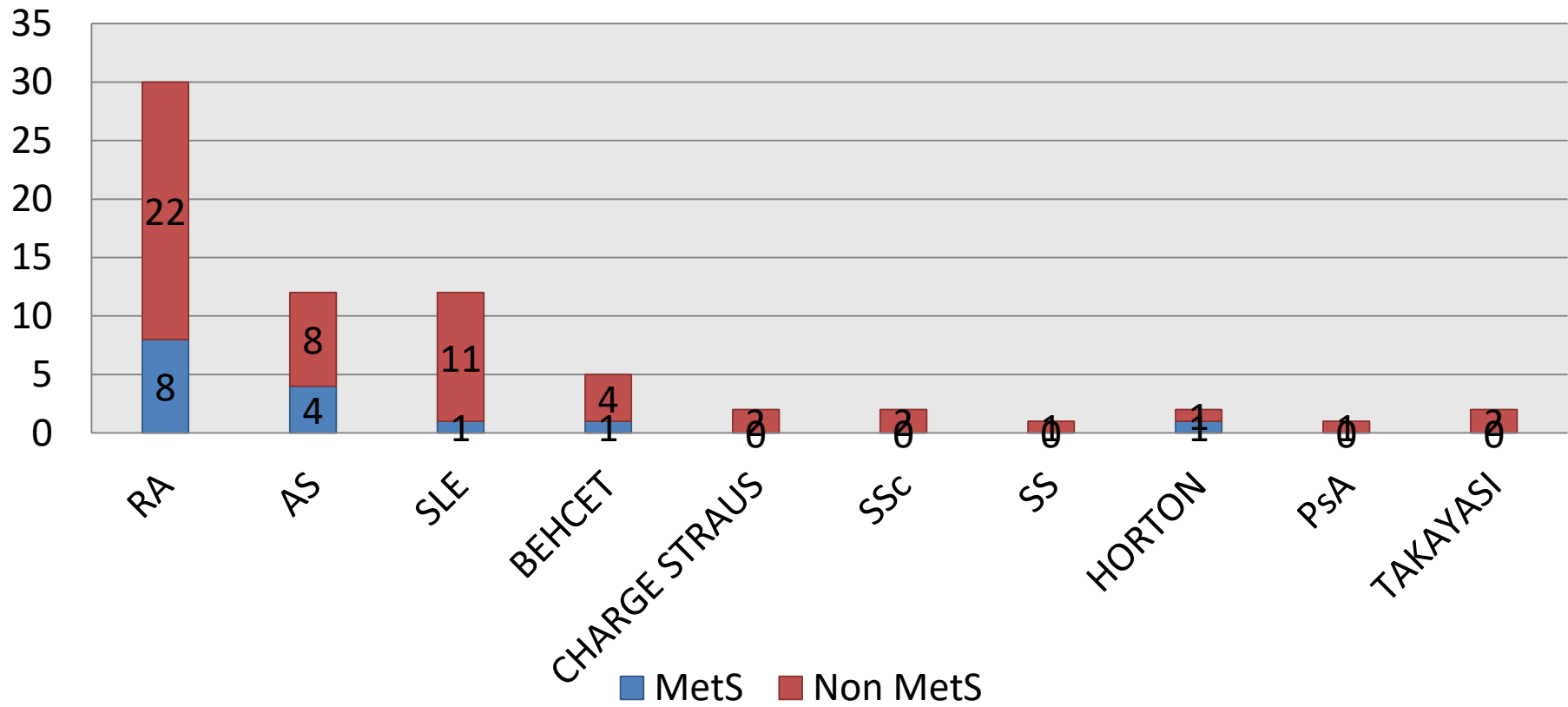
we used the specific criteria of each pathology for diagnosis
to calculate the activity rating, we used the activity score of each AID

Results & Discussion

A total of 68 patients with (AID)

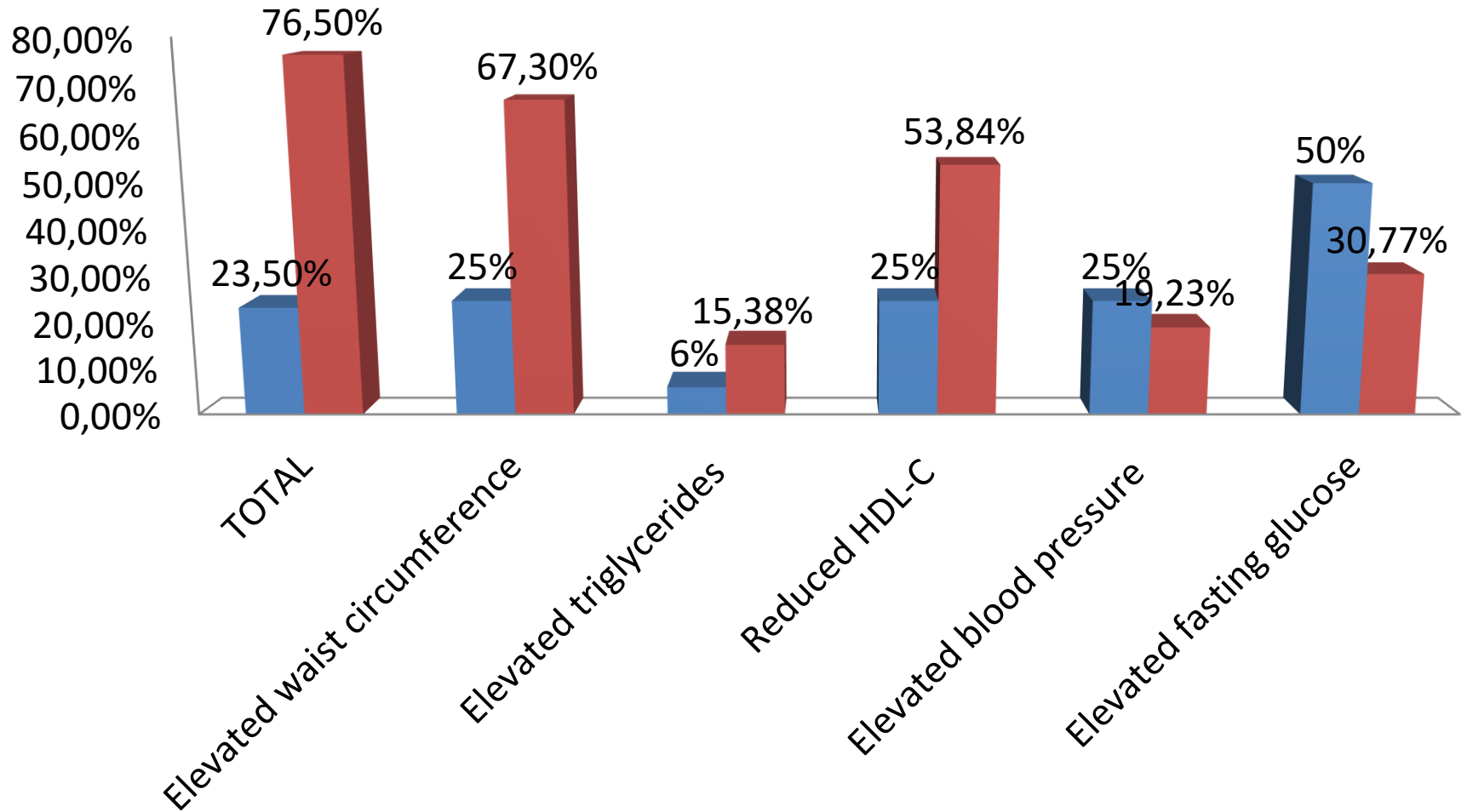


Prevalence of autoimmune diseases and their association with MetS



Distribution of patients according to the different components of the MetS in AID (alberti et al. 2009).

■ Men ■ Women



Conclusion

Obesity leads to a degradation of the body's protective self-tolerance; which makes the optimal environment for the pro-inflammatory and can worsen the progression of AID. Women have an increased risk for developing autoimmune diseases, particularly during their reproductive years. It may be due to hormonal influences as well as microchimerism resulting from fetal cell transfer during pregnancy

Tank you for your attention