



UNIVERSITY
ABOUBEKR
BELKAID



LABORATORY OF RESEARCH ON DIABETES

مخبر بحث سكري

« LAREDIAB »

Code ATRSS/DGRST N° W0417700

FACULTY OF MEDICINE BENAOUA BENZERDJEB

<https://larediab.univ-tlemcen.dz>

Mobile : 0770 218 100/ E-mail:ali.lounici@univ-tlemcen.dz



AMIWIT

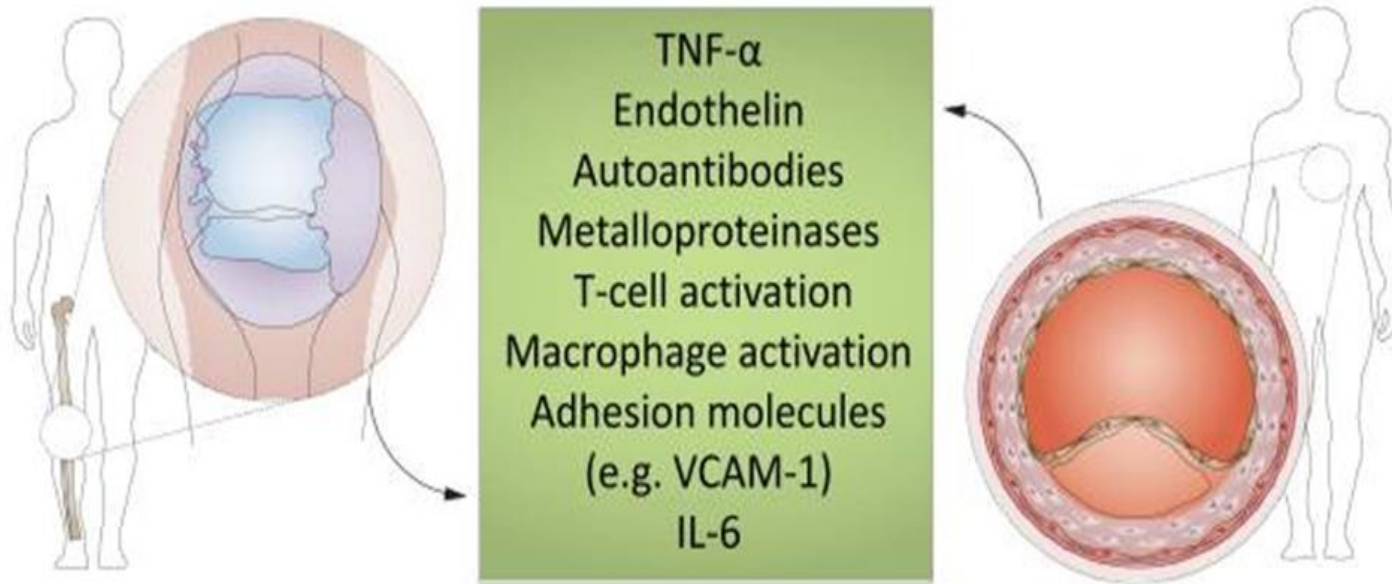


ACADEMIC HOSPITAL
TIDJANI DAMERDJI

جمعية الطب الداخلي لجامعة تلمسان

4th SEMINARY OF LAREDIAB

10th CONGRESS OF AMIWIT



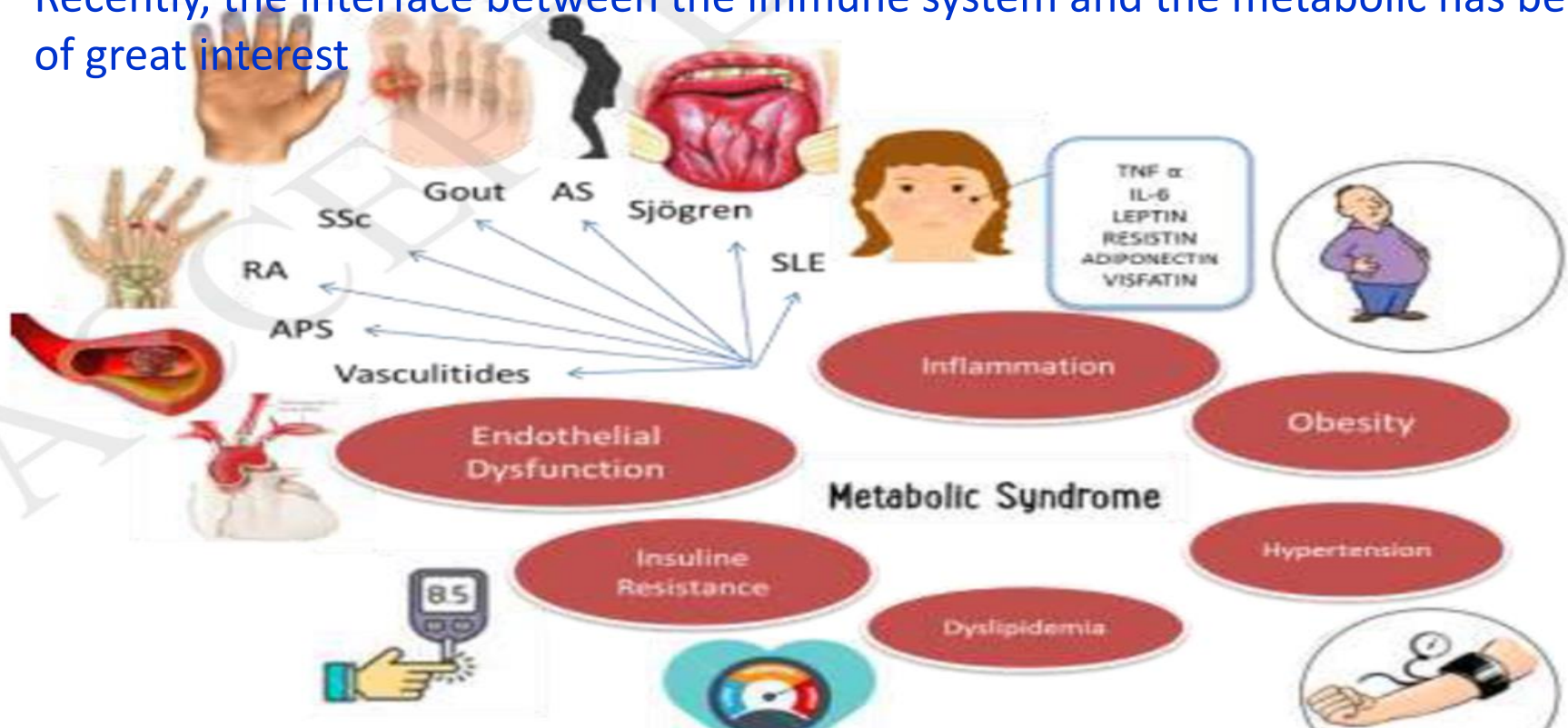
prevalence and impact of insulin resistance in systemic disease

Dr Faiza ALDDAFARI, Dr Doha Sendani, Pr Ali Lounici

RATIONAL

Metabolic syndrome (MetS) characterized by several risk factors, that include central obesity, increase of blood pressure, dyslipidemia, endothelial dysfunction and insulin resistance IR). The chronic inflammation plays a principal role in the developing of IR ,

. Systemic autoimmune diseases are a group of diseases characterized by immune system dysregulation, which leads to the activation of immune cells to attack autoantigens causing excessive inflammation and multi tissue damages. Recently, the interface between the immune system and the metabolic has been of great interest



RATIONAL

the diagnosis of metabolic syndrome (MetS) according to (Alberti et al. 2009)

by 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

RATIONAL

- The targeted biological and non-biological treatments known as a (DMARDs), for the treatment of inflammatory arthritis, (RA, AS & PsA , SS, SSc & LES). ,also improve the long-term prognosis of cardiovascular risk factors
- Hydroxychloroquine (HCQ) improved insulin sensitivity in obese patients with IR (Mercer et al. 2012; Rempenault et al. 2018).
- methotrexate therapy to decreases the inflammation and improve insulin sensitivity by increasing the level of adenosine in the extracellular also increase the action of metabolism and insulin on glucose transport (Nicolau et al. 2017; Perdan-Pirkmajer et al. 2016; Pilla et al. 2016; Solomon 2011)

RATIONAL

- Anti-TNF and Anti-IL-6 therapies can also reduce the IR, atherosclerosis-promoting systemic inflammation. Consequently, these agents might be associated with improvement of cardiovascular diseases in patients with autoimmune rheumatic disease.
- Improvement in inflammatory joint disease might also be associated with a reduction in the number of cardiac events, (Chen et al. 2015; van den Oever et al. 2020; Wasko et al. 2011)(Ogata et al. 2011:1).
- 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).

Study aims :

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

General design

Prospective study over 2 years, including 77 adult patients, well documented by diagnostic criteria specific to each pathology, from Tlemcen Algeria with systemic diseases were diagnosed and monitored in Department of Internal Medicine at Medical Center of University of Tlemcen.

Outcome Measures

1- Primary Outcome Measures include

- **Clinical** : Anthropometric measurements : blood pressure measures (mmgH) waist circumference
- **Biological dosage of** :
 1. Fasting blood sugar (FBS)
 2. Triglyceride(TG)
 3. high density lipoproteins (HDL)

2- Secondary Outcome Measures include:

- Rheumatoid arthritis (RA)
- ankylosing spondylitis (AS)
- The Systemic lupus erythematosus (SLE):
 - The Systemic Vasculitis
 - Systemic sclerosis (SS)
 - Sjogren syndrome (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

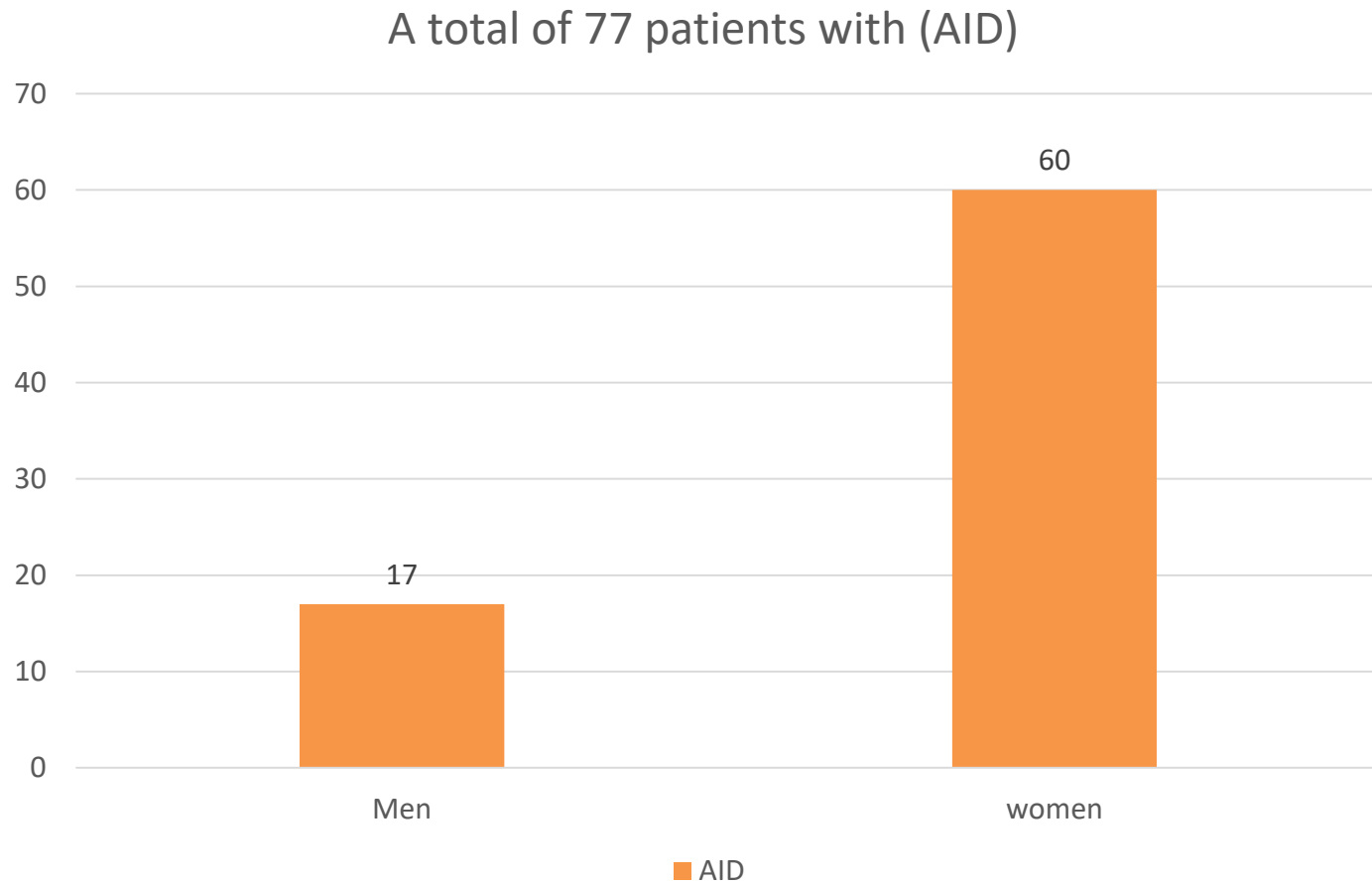


Figure 01

Prevalence of systemic diseases and their association with MetS

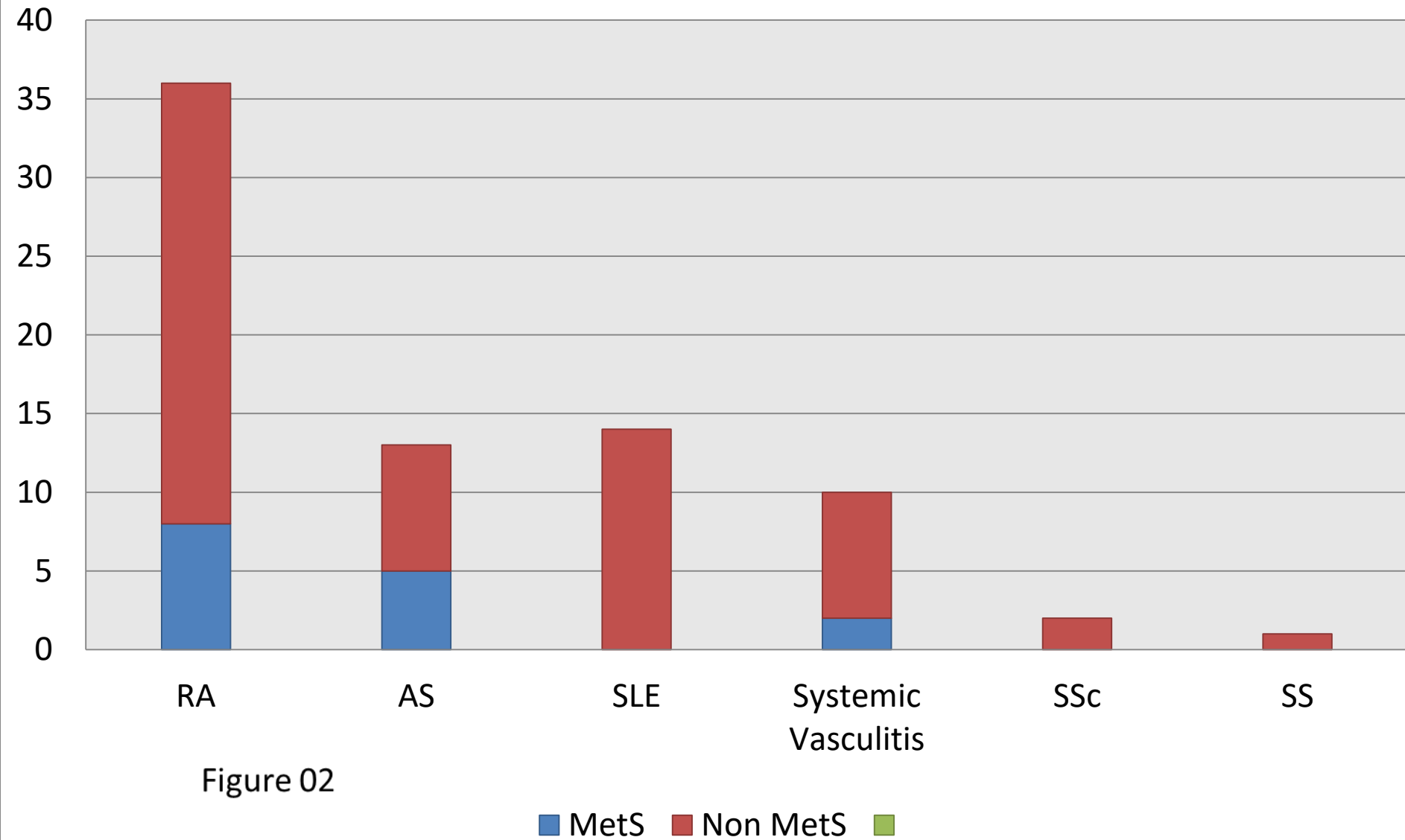


Figure 02

rheumatoid arthritis (RA) is a common inflammatory joint disease that often leads to significant disability and is associated with increased morbidity and mortality . There is evidence that rheumatoid arthritis patients have an over-risk of cardiovascular disease . This may be due to an increase in the prevalence of metabolic syndrome (MetS). (Nat Rev Rheumatol 2015)

There was no report evaluating MetS in tlemcen for RA patients. We have created a cohort of tlemcen Algeria RA patients to , clinical and laboratory features and to evaluate their current therapies in Department of Internal Medicine at Medical Center of University of Tlemcen. The prevalence of MetS among adults patient of RA in tlemcen is 22,22%

Table 1 : Characteristics of patients with rheumatoid arthritis

RA n=36	MetS+= 8(22.22%)	MetS-=28 (77.78%)
Female %	7 (87.5)	20 (71.4)
Male %	1 (12.5)	8 (28.57)
Age mean \pm SD	54.7 \pm 12	53.07
ANTHROPOMETRIC		
Elevated WC %	8 (100)	14 (50)
Elevated TG or under treatment%	3 (37.5)	1 (3.57)
Low HDL %	7 (87.5)	8 (28.57)
Elevated BP or under treatment%	5 (62.5)	3 (10.71)
Elevated fasting Glu or under treatment%	5 (62.5)	7 (25)

WC: waist circumference, TG :triglycerides , HDL: high-density lipoprotein,
BP: blood pressure, MetS-: non-metabolic syndrome, MetS+: metabolic syndrome

Table 1 :Characteristics of patients with rheumatoid arthritis

TREATMENT	MetS+	MetS-
CTC%	2 (25)	6 (21.42)
DMARDs synthetic		
MTX %	5 (62.5)	18 (64.28)
SSZ %	2 (25)	10 (35.71)
HLQ%	4 (50)	15 (53.57)
AZA %	1 (12.5)	0
LEF%	1 (12.5)	1 (3.57)
DMARDs Biologic		
ADA%	0	2 (7.14)
RTX%	1 (12.5)	0
ACTIVITY DAS28 CRP		
Remissions %	3 (37.5)	7 (25)
Low activity%	3 (37.5)	4 (14.28)
Mordait activity %	1 (12.5)	5 (17.85)
High activity %	0	3(10.71)

ADA: adalimumab, AZA: Azathioprine, CTC: Corticosteroid, DAS28: Disease Activity Score, DMARDs: disease-modifying antirheumatic drugs, Glu: glucose, HLQ: Hydroxychloroquine, LEF: Leflunomide, MTX:Methotrexate, NSAIDs: Non-Steroidal Anti-Inflammatory Drugs, RTX:, SSZ: Sulfasalazine,

Table 3: Comparison between MetS prevalence and association with disease parameters in the developing world.

Country	Study design	Sample size (n,/controls)	MetS Definition	MetS prevalence (%)	Associating factors
Brazil	Case-control	283/226	NCEPT	39.2	DAS28
Iran	Case-control	92/96	NCEPT	27.2	Duration of RA
Mexico	Observational	160	NCEPT	24	BMI, DAS28
Turkey	Case-control	54/52	AHA	42.6	DAS28
Viet Nam	Case-control	105/105	NCEPT	26	ESR, DAS28, HAQ
Morocco	Observational	179	NCEPT	24.6	Severity , less MTX use
Algeria	Observational	249	NCEPT	13.9	ESR
Tlemcen	Observational	36	(Alberti et al. 2009)	22.22	DAS28 CRP

AHA, American heart association; BMI, body mass index; CRP, C-Reactive Protein; DAS28, Disease activity Score on 28 joints; ESR, erythrocyte sedimentation rate; GC, glucocorticoids intake; HAQ, health assessment questionnaire; MetS, metabolic syndrome; MTX, methotrexate; NCEPT, National Cholesterol Education Program

Conclusion

Most affected patients have RA The beneficial impact of treatment was clear, especially in SLE. Disease activity was not associated with our patients who had Mets, but we observed elevated activity in some of our non-Mets patients.

The higher prevalence of cardiovascular risk factors in Autoimmune rheumatic diseases suggests that the inflammatory activity of the diseases triggers CVD.

An increase in the cumulative incidence of silent MI and sudden cardiac death is observed in patients with RA

the thorough monitoring and early treatment of modifiable risk factors for CVD in systemic diseases patients is necessary, with aggressive treatment by disease-modifying drugs to improve the long-term prognosis of these patients

Thank you for your attention