AUTOIMMUNE DISEASE AND CHRONIC ILLNESS IN KSA (CROSS SECTIONAL STUDY)

Abstract

Systemic lupus erythematosus (SLE) is one of the most common autoimmune diseases. So far, more than 90 medications from more than 10 drug classes have been implicated in causing lupus. This is an analytical cross-sectional study conducted at Universities, hospitals, malls (from general population) KSA from June 2021until October 2021. Prevalence study will be carried to test the questionnaire if easily understood and the response of the participants.

Keywords: Systemic lupus erythematosus, Saudi Arabia, Autoimmune disease, 7. Rheumatic fever

INTRODUCTION:

Autoimmune disease happens when the body's natural defense system can't tell the difference between your own cells and foreign cells, causing the body to mistakenly attack normal cells. There are more than 80 types of autoimmune diseases that affect a wide range of body parts

The National Institutes of Health estimates autoimmune diseases affect more than 23.5 million people in the U.S., but The American Autoimmune Related Diseases Association believes as many as 50 million people may be affected by an autoimmune disorder. There are 80 to 100 different autoimmune diseases. Some autoimmune diseases are rare, while others are more common.

According to The Autoimmune Registry, the top 10 most common autoimmune diseases include:

1. Rheumatoid arthritis
2. Hashimoto's autoimmune thyroiditis
3. Celiac disease
4. Graves' disease
5. Diabetes Miletus, type 1
6. Vitiligo
7. Rheumatic fever
8. Pernicious Anemia / Atrophic gastritis
9. Alopecia areata
10. Immune thrombocytopenic purpura

But there is another autoimmune disease like: Psoriasis, Psoriatic arthritis , Lupus and multiple sclerosis (MS).

Autoimmune Disease Risk Factors

Researchers don't know what causes autoimmune disease, but several theories point to an overactive immune system attacking the body after an infection or injury. We do know that certain risk factors increase the chances of developing autoimmune disorders, including:

- **Genetics**: Certain disorders such as lupus and multiple sclerosis (MS) tend to run in families. "Having a relative with autoimmune disease increases your risk, but it doesn't mean you will develop a disease for certain," says Orbai.
- **Weight**: Being overweight or obese raises your risk of developing rheumatoid arthritis or psoriatic arthritis. This could be because more weight puts greater stress on the joints or because fat tissue makes substances that encourage inflammation.
- **Smoking**: Research has linked smoking to a number of autoimmune diseases, including lupus, rheumatoid arthritis, hyperthyroidism and MS.
- **Certain medications**: "Certain blood pressure medications or antibiotics can trigger drug-induced lupus, which is often a more benign form of lupus," Orbai says. "Our myositis center also discovered that specific medications used to lower cholesterol, called statins, can trigger statin-induced myopathy." Myopathy is a rare autoimmune disease that causes muscle weakness. Before starting or stopping any medications, however, make sure to talk to your doctor.

There are several medications that can trigger autoimmune disease in genetically susceptible people.
The most well known case is drug induced lupus, however autoimmune hepatitis, ulcerative colitis and other autoimmune diseases may be triggered by drugs. The most likely culprits include antibiotics (particularly isoniazid, Nitrofurantoin, Minocycline), hydralazine (used for high blood pressure), isotretinoin (used for acne) and procainamide (used for abnormal heart rhythms) and anticonvulsants, used for epilepsy. In some cases, stopping the medication can ameliorate the autoimmune disease but people who develop drug induced autoimmune disease were already genetically susceptible, and may have even had a mild subclinical form of the disease, which was just unmasked by the drug.

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RATIONALE:

With the development of science and the increase in doctors, laboratories and medical competencies during the last 10 years, new immune diseases have been discovered, but there must be more diseases that have not been discovered yet. To deal with it in a simplified manner and consider it not a serious disease, and it really is. Everything is under control, including treatment and maintaining health, which benefits the patient and inhibits the activity of the immune disease, whoever it is.
And due to the high prevalence of immune diseases, it has been found that people with immune diseases suffer from other chronic diseases, so there must be a relationship between these two things and whether chronic diseases are a

risk factor that increases the rate of infection with immune diseases, or the opposite is true.

Literature Review

Autoimmune and auto-inflammatory diseases affect about 1 in 15 individuals in developed countries and are in many instances a devastating health problem to the individual patient, thereby representing a heavy burden to society. Although significant progresses have been achieved in the development of new treatment modalities, the long-term outcome is still poor for many patients with autoimmune diseases [1].

Infection remains a major cause of morbidity and mortality in rheumatic diseases. The development of vaccines is a major contribution to the inhibition of infection in rheumatic diseases [2]. However, vaccination is also a powerful immune system stimulus that has the theoretical potential to induce or exacerbate immune disturbances that manifest as serological indices of immune system dysregulation or as clinically manifest autoimmune disease [3]. The association between vaccines and autoimmune inflammatory rheumatic diseases (AIIRD) is a complex one.

Autoimmune reactions and inflammation are mainly involved in their pathogenesis. Already at early onset atherosclerosis inflammatory cells (monocytes, macrophages, dendritic cells, T- and B-cells) and cytokines can be identified in the lesion area and those cells may provoke cell-mediated immune reactions (CMIR) that (i) modulate the development of atherosclerosis and may (ii) predetermine its progression [1, 2].

Immune reactions may modulate atherosclerosis in different ways: (i) β2 glycoprotein I-immunization led to an increase, (ii) heat shock protein (HSPs) 60/65 antigen led to an increase, and (iii) oxLDL-immunization led to a decrease [3, 4]. In addition to established risk factors of CVD, autoimmune processes are discussed as being highly relevant. Autoimmune disorders are associated with a high CVD risk in clinical practice. In a major autoimmune disease, SLE, animal studies identified mainly proinflammatory Th1 cytokines (e.g., IFN-gamma), whereas in humans with SLE mainly Th2 cytokines were identified as involved in CMIR [3].

Risk factors for CVD in SLE are enhanced atherosclerosis, increased inflammation, elevated levels of oxidized LDL (oxLDL) and autoantibodies against oxLDL, increased triglycerides, total cholesterol (TC) and Lp(a) and decreased HDL-cholesterol, raised systemic

inflammation and the presence of anti-phospholipid antibodies (aPL), high homocysteine levels, and osteoporosis [2]. But the relative risk of CVD differs among the specific autoimmune disease. Some autoimmune disorders like systemic lupus erythematosus (SLE), rheumatoid arthritis, antiphospholipid (Hughes) syndrome (APS), and systemic sclerosis carry a high risk of CVD development, whereas others as the Sjögren's syndrome and systemic vasculitis seem to have a weaker influence on CVD development.

Research objectives:

The Aim: Relationship Between Autoimmune disease and chronic illness

Objective:

1. The most age group suffering from autoimmune disease.
2. Most common auto immune in Males .
3. Most common autoimmune in females.
4. Autoimmune disease and DM.
5. Auto immune disease and smoking.
6. Autoimmune disease and increased weight.
7. Autoimmune disease and medications
8. Most common chronic illness

Methods:

Study design: This is an analytical cross-sectional study.

Study Setting and period: This is an analytical cross-sectional study conducted at Universities, hospitals, malls (from general population) KSA from June 2021until October 2021

- Study population and sampling:

- Study participants:
Inclusion criteria; Patients and General population ,
Exclusion criteria; other
- Sampling method: Participants will be randomly selected and carried out by questionnaire.
- Sampling size: A number should be collecting 700or more participants from the Patients and general population.

Measurements:

-Variables

1. Sociodemographic characteristics: age ,gender and BMI

2. Disease related information: Dm , Smoking , IBD , chronic illness and risk factors for immune disease .

Outcome measures

The outcome measure is by counting the ratio of the number of patients s who have anu autoimmune disease this will be measured using:

By determining the relationship between chronic illness and risk factors for autoimmune disease.
Prevalence study: will be carried to test the questionnaire if easily understood and the response of the participants.
Data from the cross-sectional study will be used to calculate the sample size.

Data Management and Analysis plan:

Data will be entered and analyzed using SPSS version 17.0 Descriptive statistics will be performed and categorical data will be displayed as frequencies and percentages while measures of patients with auto immune disease and measures chronic illness in relation of risk factors will be used to summarize continuous variables.

Univariate and multivariate analysis will be performed to investigate association between age, gender, and risk factors and chronic illness. statistical significance is set at a P value of 0.05 or less.

Ethical considerations:

Administrative approval will be sought from the unit of biomedical ethics research committee Ethical approval will be sought from the ethical committee of the faculty of medicine, Jeddah university. An informed consent will be sought from the participants.

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