

GLUCOCORTICOID THERAPY IN PATIENTS WITH RHEUMATOID ARTHRITIS – A CAUSE OF HYPERTENSION

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ABSTRACT

RHEUMATOID ARTHRITIS (RA) IS AN AUTOIMMUNE DISEASE THAT AFFECTS ESPECIALLY THE JOINTS BUT IT'S AUTOIMMUNE CHARACTER IS BEST SEEN IN ITS SYSTEMIC AFFECTION. PATIENTS WITH RA ARE WELL KNOWN TO HAVE AN IMPORTANT RISK OF MORBIDITY AND MORTALITY FROM CARDIOVASCULAR DISEASE (CVD).

NOWADAYS, GLUCOCORTICOIDS (GCS) ARE USED IN RHEUMATOLOGY AS “BRIDGE THERAPY” WHILE WAITING FOR ONSET OF ACTION OF DISEASE-MODIFYING ANTIRHEUMATIC DRUGS (DMARDs), OR FOR DISEASE FLARES¹⁰. NUMEROUS STUDY SUGGEST THAT THE USE OF GCS ALONG WITH STANDARD THERAPY CAN SUBSTANTIALLY REDUCE THE PROGRESSION OF EROSION IN RA¹¹

KEY WORDS: GLUCOCORTICOIDs, RHEUMATOID ARTHRITIS, HYPERTENSION, CARDIOVASCULAR DISEASE

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¹⁰ V.F. Panoulas, K.M.J. Douglas et.all “Long-term exposure to medium-dose glucocorticoid therapy associates with hypertension in patients with rheumatoid arthritis”

¹¹ Kirwan JR, Bijlsma JW, Boers M, Shea BJ “Effects of glucocorticoids on radiological progression in rheumatoid arthritis”. Cochrane Database Syst Rev 2007: CD006356

INTRODUCTION

Patients diagnosed with RA are well known to have an increased cardiovascular disease risk and a reduced life span compared with the general population¹².

Treatments for rheumatoid arthritis seem to exert differential effects on cardiovascular risk as well as the mechanisms linking these conditions. More research is needed to establish whether preferential rheumatoid arthritis therapies exist in terms of prevention of cardiovascular disease.¹³

THE AIM OF THE STUDY

The aim of this study was to evaluate the association between GCs treatment and hypertension status among RA patients undergoing DMARDs+ glucocorticoids treatment treated in the CF Clinical Hospital of Craiova and to compare it with the incidence of hypertension in patients undergoing DMARDs treatment.

MATERIAL AND METHHOD

This presented study is a observational, descriptive study that was conducted over a period of 1 year between April 2017 – May 2018. The conducted study included 24 patients previously diagnosed with RA undergoing DMARDs treatment and a group of 24 patients previously diagnosed with RA undergoing DMARDs+ glucocorticoids (> 7.5mg prednisolone/day) treatment for at least 6 moths.

RA diagnosis was according to the 2010 American College of Rheumatology (ACR)/ European League Against Rheumatism (EULAR) classification criteria.

Hypertension was defined as a systolic blood pressure >140mmHg and a diastolic blood pressure >90mmHg, or a controlled blood pressure along with the use of anti-hypertension drugs.

This study was conducted in accordance to the Declaration of Helsinki and local regulations. Ethical approval for the study was obtained from the Local Ethics Committee and also, patients in both groups signed an informed consent.

RESULTS AND DISCUSSIONS

Both studied groups were similar regarding the age of the patients. Thus the group receiving only DMARDs were aged between 44 and 66 years old with a higher incidence in the age group of 50-60 y.o. (15 patients – 62.5%) and the group undergoing DMARDs+ prednisolone were aged between 46- 65 y.o. also with a higher incidence in the age group of 50-60 y.o (16 patients – 66.6%). (*Figure 1*)

¹² Solomon D, Karlson E, Rimm E, Cannuscio C, Mandl M “Cardiovascular morbidity and mortality in women diagnosed with rheumatoid arthritis”. *Circulation* 2003; 107:1303-7

¹³ <https://www.bmj.com/content/361/bmj.k1036>

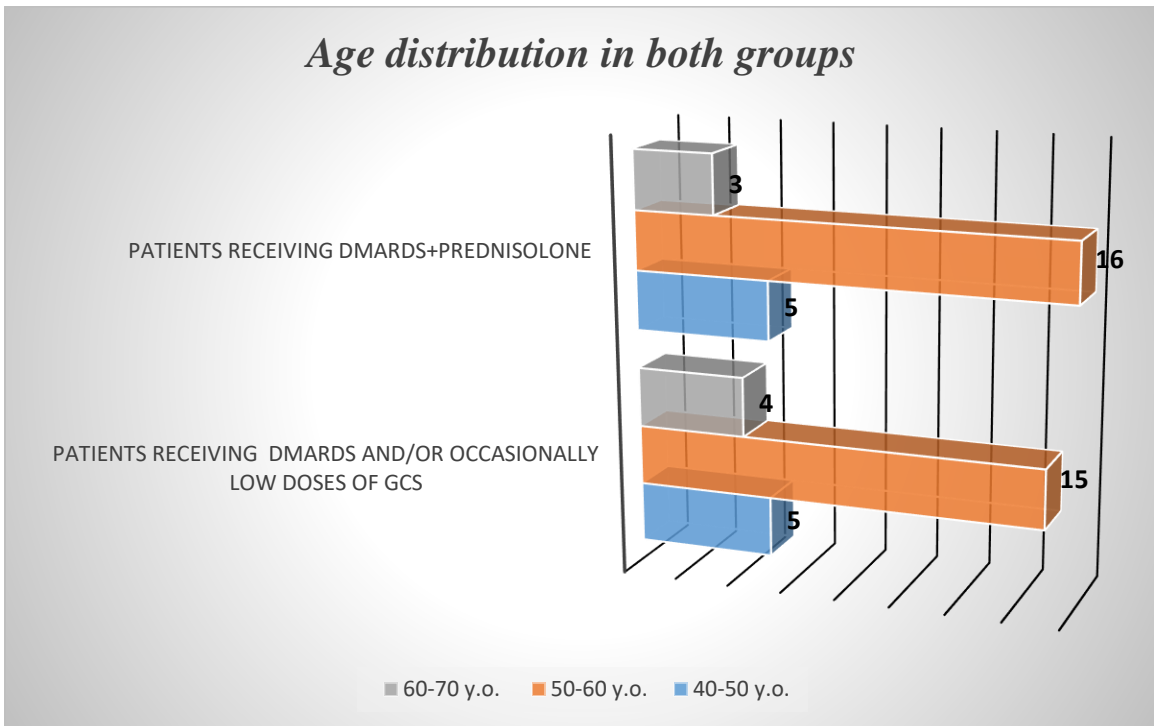


Figure 1. Age distribution in both groups

Regarding gender distribution, it is well known that RA is more prevalent in women with an approximate gender ratio women to men of 3:1. Our study also show a higher incidence of RA in women both groups. Thus, 20 women were included in the group of patients receiving only DMARDs and 19 women in the group of patients .

Our study showed that out of 48 patients in both groups 7 patients had a history of hypertension – being diagnosed previously of starting the treatment with GCs.

Regarding the hypertension status among patients in both groups, we found that 28 patients (58.33% among the total number of patients) were hypertensive. (Figure 2).

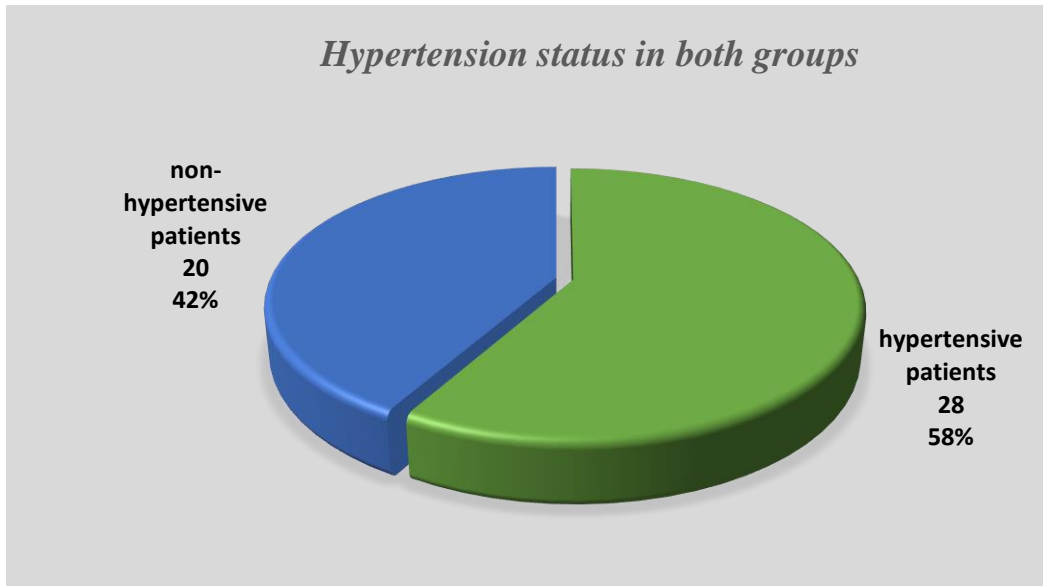


Figure 2. Hypertension status in patients included in the study

The prevalence of HT were significantly higher in the DMARDs+ GCs group than in the group of patients receiving only DMARDs. Thus, 18 patients (37.5% from the total number of patients, respectively 75% of the patients in group receiving also GCs) were hypertensive. (Figure 3)

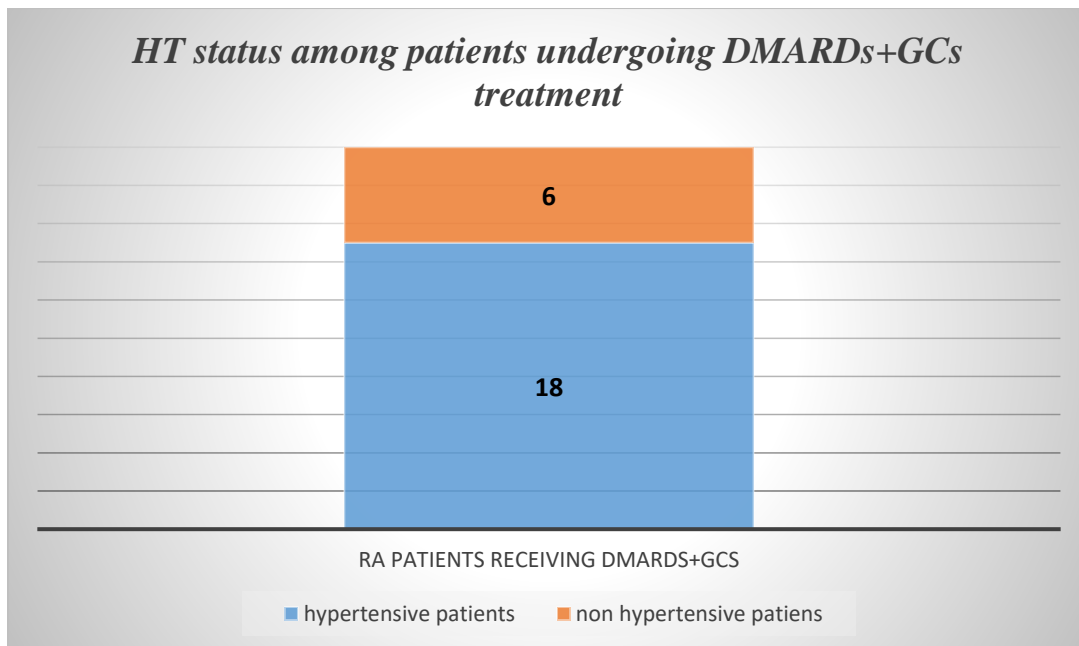


Figure 3. HT status among patients undergoing DMARDs+GCs treatment

Regarding the patients undergoing only DMARDs and/or with low dose of GCs taken occasionally, 10 patients were hypertensive (20.83 % from the total number of patients, respectively 41.66% of the patients in group receiving only DMARDs and/or occasionally low doses of GCs).(Figure 4)

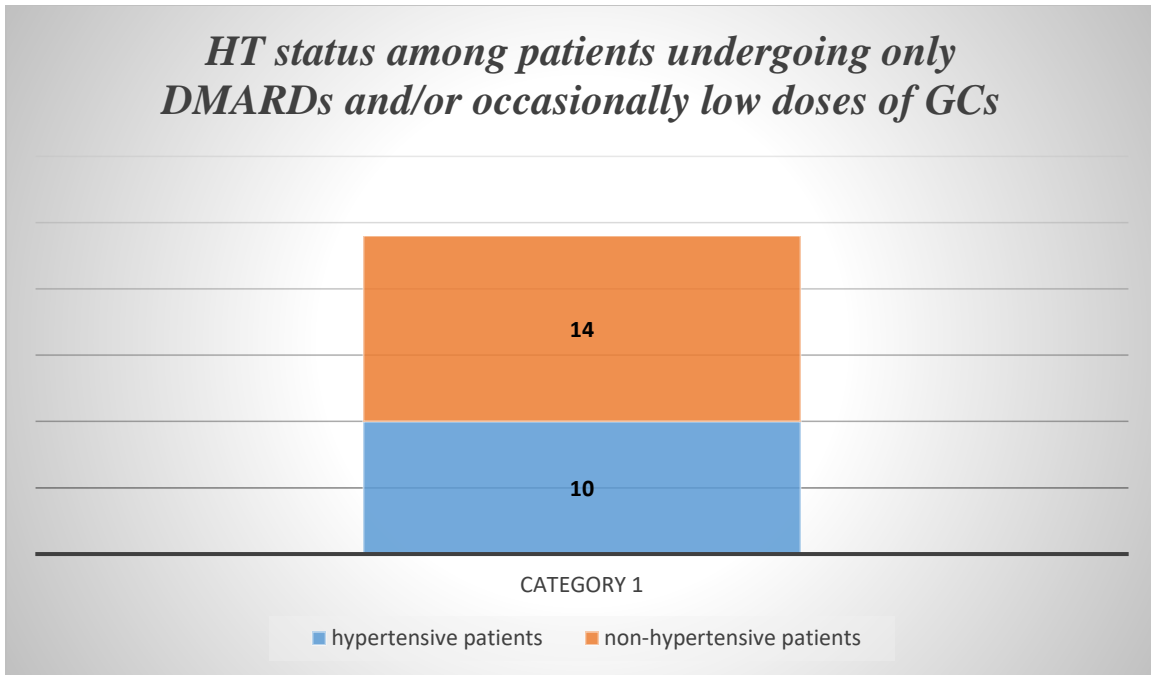


Figure 4. HT status among patients undergoing only DMARDs and/or occasionally low doses of GCs

The incidence of HT distributed on age groups showed similarities on both sides. Thus, Ra patients undergoing DMARDs and /or occasionally low doses of GCs with hypertension were mainly aged between 50-60 years old (9 patients , 64.28% from the hypertensive patients in this group, respectively, 37.5% from the total number of patients in this group). (Figure 5)

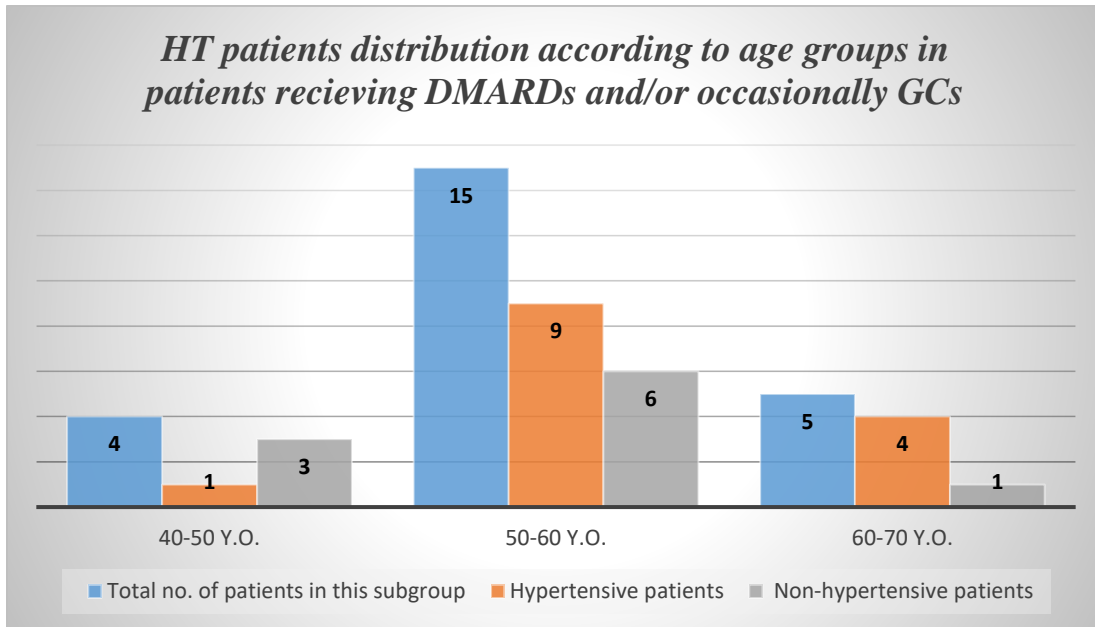


Figure 5. HT patients distribution according to age groups in patients receiving DMARDs and/or occasionally GCs

Regarding RA patients undergoing DMARDs and GCs with hypertension were mainly also aged between 50-60 years old (11 patients , 61.11% from the hypertensive patients in this group, respectively, 45.83% from the total number of patients in this group).(Figure 6)

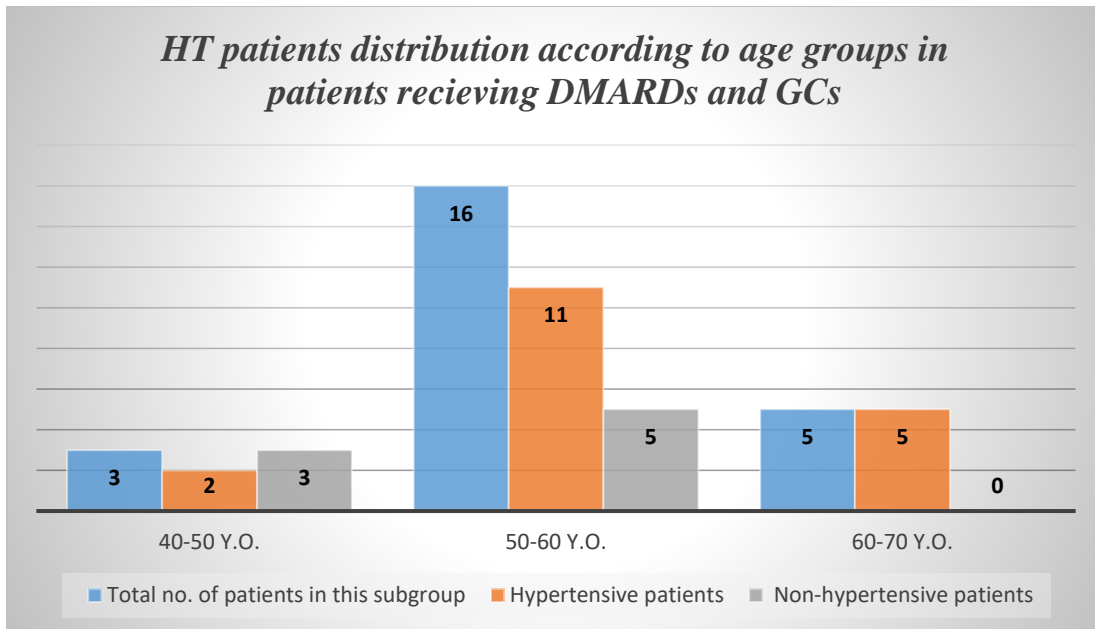


Figure 6. HT patients distribution according to age groups in patients receiving DMARDs and GCs

CONCLUSIONS AND DISCUSSIONS

The presented study suggest that patients with RA exposed to GCs (>7.5mg/day of prednisolone for more than 6 months) have a higher incidence of high blood pressure than patients undergoing only DMARDs and/or occasionally low doses of GCs.

The study has its limitations because it is well known that RA patients have a higher CVD risk particularly explained due to high inflammatory markers that are present in the serum of RA patients.

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4. <https://www.bmj.com/content/361/bmj.k1036>