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A Case Study

OBSERVATIONAL STUDY TO EVALUATE THE RISK AND PREVALENCE OF CARDIOVASCULAR DISEASES AND RENAL IMPAIRMENT IN PATIENTS WITH PSORIASIS

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Abstract:

Background: Cardiovascular disease (CVD) - the leading cause of death globally. In many countries, CVD is the major disease in population, including smoking, hypertension, and elevated serum cholesterol, are now improving, and age-specific mortality rates are declining. So we are assessing the risk of Cardiovascular diseases and renal impairment in psoriasis which is a inflammatory disorder.

Aim: To assess the CVD risk, RI risk and QOL in patients with psoriasis and to know the prevalence of psoriasis.

Methodology: Ambispective observational study was carried out in Government General Hospital, Guntur. Patients who satisfy inclusion criteria were included in the study after obtaining informed consent. QRISK 3 is used to assess the risk of cardiovascular disease in patients and Qkidney scale is used to assess the risk of renal impairment in the patients. By using SF36 quality of life is assessed.

Results: We observed that, with increase in disease duration, there is an increase in inflammation there is an increase in cardiovascular disease risk. We revealed that, Psoriasis, is not initiating the renal impairment risk in cases, because of inflammation that is caused by this disease leads to renal impairment risk. Cardiovascular diseases is 28.64%, prevalent in psoriasis disease respectively. Renal impairment is 5.94%, prevalent in psoriasis.

Conclusion: Based on the results obtained our study strongly concludes that there is a cardiovascular risk and renal impairment risk in people suffering with psoriasis and there is a risk of disease, with increase in disease duration, there is a decrease in quality of life in the patients.

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INTRODUCTION:**BACKGROUND:**

Cardiovascular disease (CVD) is one of the leading causes of death globally. In many countries, population distributions for major risk factors for CVD (smoking, hypertension, and elevated serum cholesterol) are now improving, and age-specific mortality rates are declining. The focus of our research has thus shifted to less well-characterized etiologic and antecedent factors. Several studies have suggested that chronic inflammation may be associated with an increased risk of atherosclerotic diseases[1]. Chronic systemic inflammation is an independent risk factor for atherosclerosis by promoting plaque formation, inducing endothelial dysfunction, and promoting platelet activation and aggregation. Active inflammation also predisposes to thrombosis by altering the balance between physiological procoagulants and anticoagulants and inducing a state of hypo fibrinolysis[2]. Previously reported evidence derives from studies that explored the rates of CVD and renal impairment in patients with inflammatory diseases. Rheumatic diseases such as Rheumatoid arthritis (RA) and systemic lupus erythematosus (SLE) result in chronic inflammation and increased risk of atherosclerosis, which is the most common pathology process leading to cardiovascular disease (CVD)[3]. Therefore, this study uses as a baseline survey on the magnitude of renal dysfunction in rheumatoid arthritis patients, associated factors, and informs on modes of intervention. Knowing the risk factor and creating awareness may also provide a means of optimizing care. Therefore, this research would help in identifying key gaps and provide a good means of understanding the disease and the associated risk factors in the treatment courses [4]

The present research used a prospective case-control design and retrospective cohort design to evaluate the hypothesis that risks of Cardiovascular diseases that are consistently elevated in chronic inflammatory disease psoriasis and to create awareness on CVD and Renal impairment risk.

AIM: To assess the risk of Cardiovascular Diseases, Renal Impairment in people with Chronic Inflammatory Disorders.

OBJECTIVES:

- To perform the risk assessment of Cardiovascular Diseases, Renal Impairment in people with Psoriasis.
- To know the prevalence of Cardiovascular Diseases, Renal Impairment in people with Chronic Inflammatory Disorders.

- To assess the quality of life in people with Psoriasis.

METHODOLOGY:

Study site: Department of general medicine, Government General Hospital, Guntur.

Period of Study: 6 months (October 2019 to March 2020)

Study Design: Ambispective observational study

Sample size: Patients who are diagnosed with Chronic Inflammatory Disorders and people who are suffering from Cardiovascular Diseases, Renal Impairment in Chronic Inflammatory Disorders.

Inclusion criteria:

- For prospective evaluation, Patients who are diagnosed with Psoriasis.
- Patients who are willing to participate in the study.
- Patients with age >35 years.
- For retrospective evaluation, Patients Psoriasis along with cardiovascular diseases or renal impairment.

Exclusion criteria:

- Patients who are <35 years of age.
- Those who are not willing to participate in the study.
- patients with pregnancy.

For prospective evaluation, Patients with any other disease co-morbidities.

METHODS:

The study was approved by the Institutional Ethics Committee, Government General Hospital, Guntur, Andhra Pradesh. The study was designed to be a case control study in case of prospective approach and retrospective cohort in case of retrospective approach. It was conducted in various departments of Government General Hospital, Guntur, Andhra Pradesh, India. The study was conducted over a period of 6 months from September 2019 to February 2020 which includes a sample size of 546 (Cases = 273, Controls = 273) in case of Psoriasis. In case of prospective study, Patients are randomly enrolled in the study based on inclusion (Patients who are willing to participate Psoriasis and not diagnosed with any CVD and renal impairments, age \geq 35) and exclusion criteria (Patients who are not willing to participate, Patients with chronic inflammatory disorders and already diagnosed with any CVD and renal impairments, Age < 35 years).

RESULTS:

This prospective case-control study was conducted in the General Medicine Department of Government General Hospital from October 2019 to March 2020

and a retrospective cohort study was conducted in the General Medicine Department of Government General Hospital from September 2014 to September 2019.

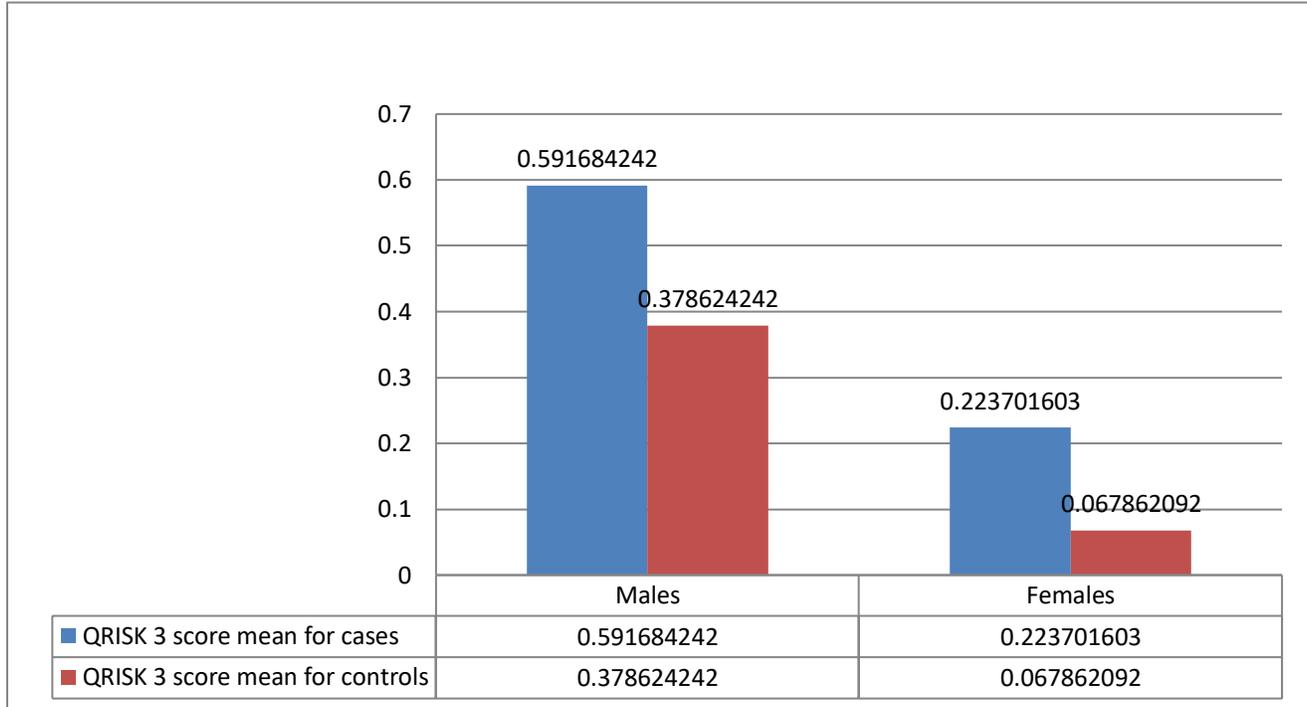
CARDIOVASCULAR DISEASE RISK ASSESSMENT

Fig: 1 Graph1 depicts the information regarding the Qrisk3 calculator score mean in cases(subjects who have Psoriasis) and controls.Qrisk3 score mean is higher in cases than controls.

IGNIFICANCE TESTING BETWEEN CASES AND CONTROLS IN CASE OF QRISK3 ASSESSMENT IN PSORIASIS :

Z test applied for the mean values of cases and controls. Results implied that the mean difference between cases and controls is 31% with a P-value of 0.00, which depicts that there is an association between CVD and Psoriasis.

Multiple logistic regression model is applied to asses the significance of confounding factors in cardiovascular risk assessment in Psoriasis. Age

,BMI, disease severity score, psoriasis disease duration in subjects,CRP, Hypertension, blood sugar levels, are taken as independent variable and Qrisk score of cases is taken as dependent variable. Results said that there is significant association between Qrisk score of cases and disease duration(p value =0.00), severity scale score(p value =0.002),ESR(p-value=0.002), CRP(p-value=0.001),and there isn't any significant Association between age(p-value=0.947),blood sugar levels(p-value=0.325), Hypertension(p-value=0.281), BMI(p-value=0.229).

RENAL IMPAIRMENT RISK ASSESSMENT

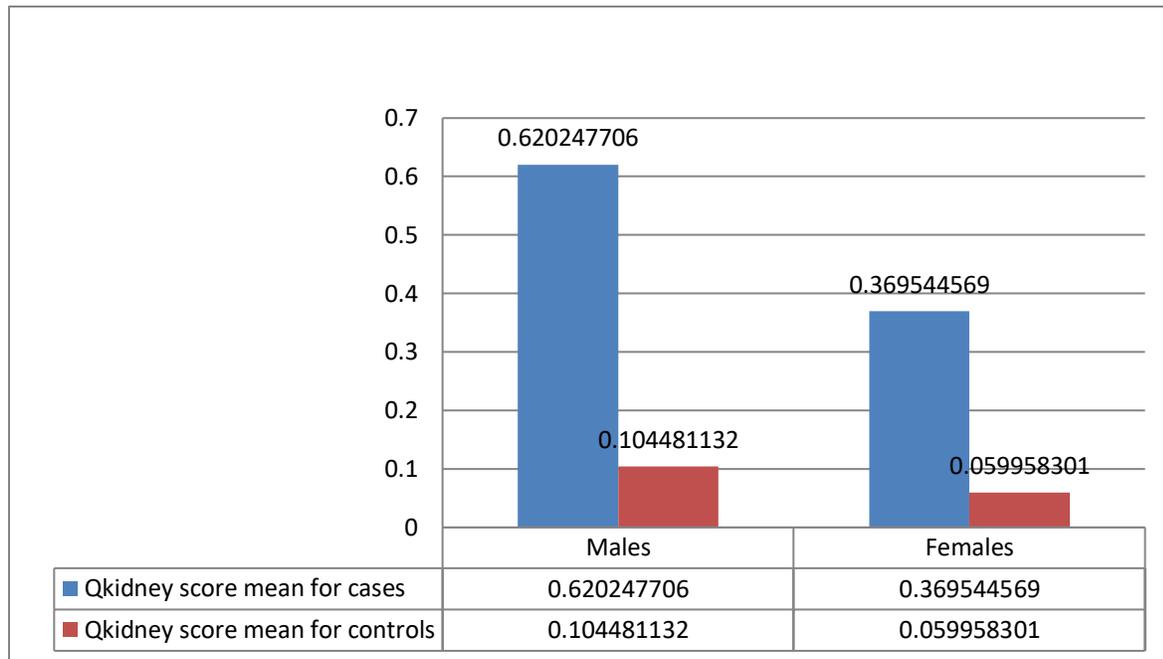


Fig: 2 Graph2 depicts the information regarding the Qkidney score calculator score mean in cases(subjects who have Psoriasis) and controls. Qkidney score calculator score mean is higher in cases than controls

SIGNIFICANCE TESTING BETWEEN CASES AND CONTROLS IN CASE OF QKIDNEY ASSESSMENT IN PSORIASIS:

Z- test applied for the mean values of cases and controls. The average next 10years risk (%) in cases and controls are 18.07 % and 10.82% respectively with a P-value of 0.00 which states that there is an association between renal impairment and psoriasis.

Multiple logistic regression model is applied to assess the significance of confounding factors in renal impairment risk assessment in Psoriasis. Age, BMI, disease severity score, psoriasis disease duration in subjects,CRP, Hypertension, blood sugar levels, are taken as independent variable and Qkidney score of cases is taken as dependent variable. Results said that there is significant association between Qkidney score of cases and disease duration (p value =0.00), severity scale score (p value =0.005), ESR (p-value=0.002), CRP(p-value=0.000), and there isn't any significant Association between age(p-value=0.670), blood sugar levels(p-value=0.721), Hypertension(p-value=0.381), BMI (p-value=0.426).

DISEASE DURATION VS CRP AND ESR VALUES

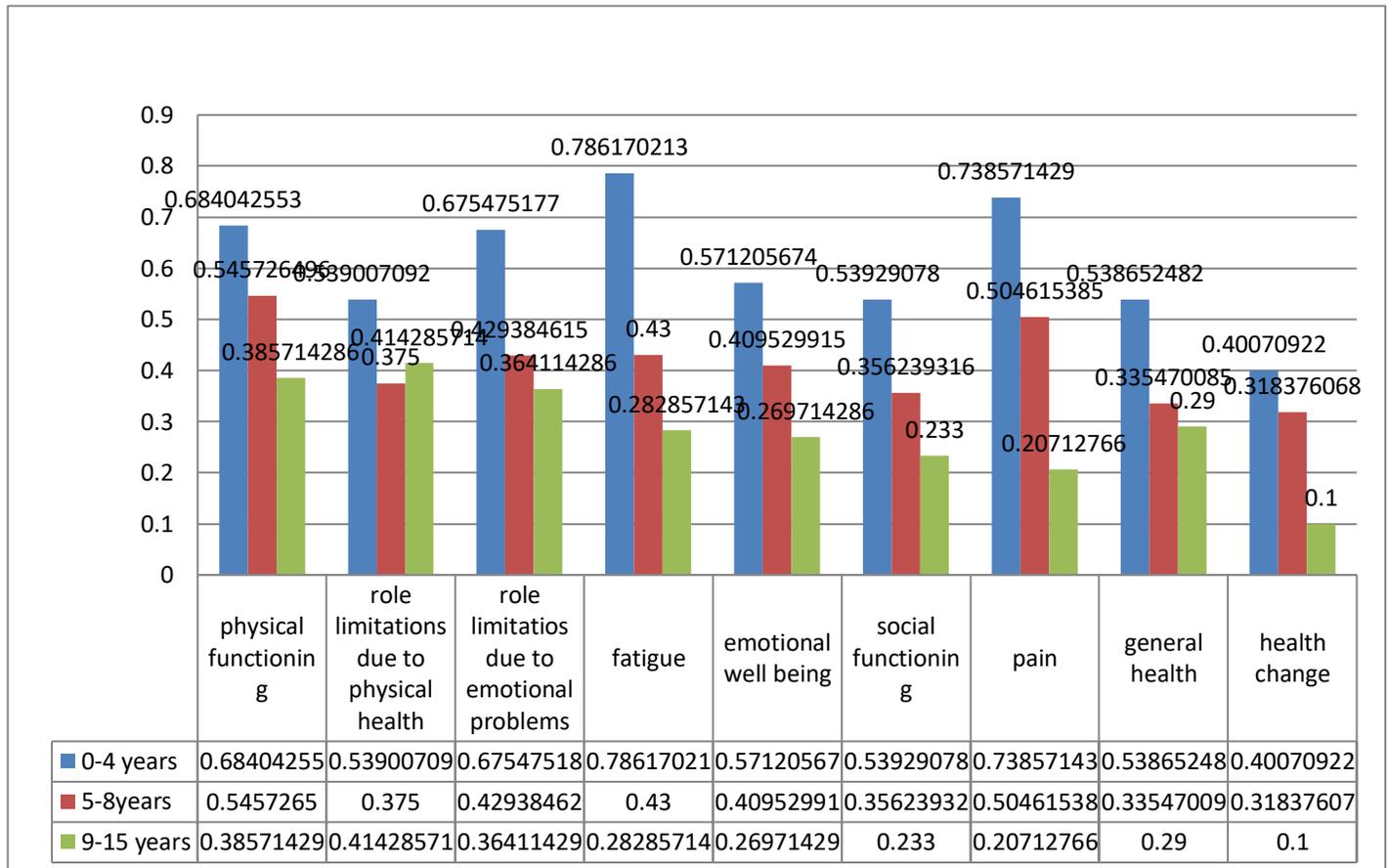
Levels of CRP and ESR in Psoriasis subjects:

When CRP levels and ESR levels of cases are plotted against disease duration of Psoriasis, it was observed that, there is an increase in CRP and ESR levels with increase in disease duration.

ASSESSMENT OF QUALITY OF LIFE IN PSORIASIS BY USING SF-36 (SHORT FORM):

Assessment of quality of life in Psoriasis subjects, did with the help of SF-36 which includes 9 major Factors namely Physical functioning, role of limitation of physical health, role of Emotional problems, energy/fatigue, emotional wellbeing, social functioning, pain , General health ,health change .And mean percentage shown the results accordingly. Graph shows that, with increase in disease duration, there is a decrease in quality of life in Rheumatoid arthritis subjects.

SIGNIFICANCE TESTING BETWEEN DISEASE DURATION AND QUALITY OF LIFE PARAMETERS IN CASE OF PSORIASIS :



DISCUSSION:

- We mainly considered three points in this study such as cardiovascular risk, renal impairment and quality of life in patients with psoriasis.
- In risk assessment of cardiovascular diseases, we used Qrisk3 calculator score mean in cases (subjects who have Psoriasis) and controls. Qrisk3 score mean was higher in cases than controls. Results said that there was significant association between Qrisk score of cases and disease duration (p value =0.00), severity scale score (p value =0.002), ESR (p-value=0.002), CRP(p-value=0.001), and there wasn't any significant Association between age(p-value=0.947), blood sugar levels(p-value=0.325), Hypertension(p-value=0.281), BMI (p-value=0.229).
- In case of risk assessment of renal impairment, we used the Qkidney score calculator score mean in cases (subjects who have Psoriasis) and controls and the score mean was higher in cases than controls. Results said that there is

significant association between Qkidney score of cases and disease duration (p value =0.00), severity scale score (p value =0.005), ESR (p-value=0.002), CRP(p-value=0.000), and there isn't any significant Association between age(p-value=0.670), blood sugar levels(p-value=0.721), Hypertension(p-value=0.381), BMI (p-value=0.426).

- Regarding the Assessment of quality of life in Psoriasis subjects, we used SF-36 which includes 9 major Factors namely Physical functioning, role of limitation of physical health, role of Emotional problems, energy/fatigue, emotional wellbeing, social functioning, pain, General health, health change. Results shows that with increase in disease duration, there is a decrease in quality of life in Psoriasis subjects.

CONCLUSION:

Prevention and care of cardiovascular diseases and Renal Impairment have become an important public health policy. Compared to the well-known

traditional risk factors, the risk for renal impairment and CVD is also associated with psoriasis and these risk factors are under-recognized. Therefore, it is desirable to include assessment of cardiac function tests and renal function tests in the integrative care for patients with psoriasis. Also, long-term use of nephrotoxic drugs should be avoided and nephrologists should be consulted when necessary.

Physicians who care for patients suffering from chronic inflammatory disorders like psoriasis should be aware of the higher risk of CHD. In addition to aggressive control of chronic inflammatory disorders, a more vigilant and aggressive approach to screen for unrecognized CHD, and to initiate treatment of CHD comorbidity may be warranted, since it could lead to reductions in the rate of CHD-related mortality in patients suffering from chronic inflammatory disorders psoriasis.

REFERENCES:

1. Dregan A, Charlton J, Chowienczyk P, Gulliford MC. Chronic inflammatory disorders and risk of type 2 diabetes mellitus, coronary heart disease, and stroke: a population-based cohort study. *Circulation*. 2014;130(10):837–844.
2. Hippisley – Cox, Coupland C, Vinogradova Y, et al; Predicting Cardiovascular risk in England and Wales: Prospective derivation and validation of QRisk2. *BMJ*. 2008, JUN 28;336 (7659): 1475 – 82. Epub 2008 Jun 23
3. Boehnke WH, Schön MP. "Psoriasis". *Lancet*. 2015; 386 (9997): 983–94.
4. Menter A, Gottlieb A, Feldman SR, Van Voorhees AS, Leonardi CL, Gordon KB, et al. "Guidelines of care for the management of psoriasis and psoriatic arthritis: Section 1. Overview of psoriasis and guidelines of care for the treatment of psoriasis with biologics". *Journal of the American Academy of Dermatology*. 2008;58 (5): 826–50.
5. Gelfand JM, Neimann AL, Shin DB, Wang X, Margolis DJ, Troxel AB. Risk of myocardial infarction in patients with psoriasis. *Journal of the American Medical Association*. 2006;296(14):1735–1741.
6. Yeung H, Takeshita J, Mehta NN, et al. Psoriasis severity and the prevalence of major medical comorbidity: a population-based study. *Journal of the American Medical Association Dermatology*. 2013;149(10):1173–1179.
7. Wan J, Wang S, Haynes K, Denburg MR, Shin DB, Gelfand JM. Risk of moderate to advanced kidney disease in patients with psoriasis: population-based cohort study. *BMJ*. 2013;347:f5961.