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Special Article – Psoriasis

Consideration of an Appropriate Therapeutic Regimen and a Regular Screening Program for Patients with Psoriasis Regarding the High Risk of Cardiovascular Disease in these Patients

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Editorial

Psoriasis is a chronic immune-mediated inflammatory disorder [1]. Studies have shown its association with diabetes mellitus, obesity, blood Hypertension (HTN), hyperlipidemia, smoking, metabolic syndrome, atherosclerosis, thromboembolism, and Cardiovascular Disease (CVD). Prevalence of these risk factors increases with severity of psoriasis. Studies have shown increased overall mortality in patients with psoriasis, with the CVD is the most common cause of death in these patients.

It appears that psoriasis is an independent risk factor for CVD. More strikingly, there are overlapping immune pathways in both of these diseases, so that increased T helper 1 cytokines, such as interferon-γ, tumor necrosis factor (TNF)-α, and interleukin (IL)-2 are characteristics of both of them. Additionally, Vascular Endothelial Growth Factor (VEGF) has a main role in angiogenesis in both diseases.

In this article, Hugh et al have comprehensively reviewed the impact of systemic therapies on the risk of CVD in patients with psoriasis.

Phototherapy: Narrowband ultraviolet (UV)-B and psoralen plus UVA (PUVA) therapies can significantly decrease TNF-α, IL-17, IL-22, and IL-23. Other effects of PUVA include in decreased serum levels of lipoprotein (a), increased levels of apolipoprotein -B, and increased heart rate. Generally, notable cardiac side effects related to phototherapy have not reported in studies.

Systemic retinoids: Although retinoids increase serum triglycerides and cholesterol by shifting high-density lipoproteins to low-density lipoproteins, no increase in risk of CVD has yet been reported with these agents.

Cyclosporine: Cardiovascular side effects of cyclosporine can be summarized in generation of reactive oxygen species resulting in myocardial cell death, inhibition of VEGF-dependent migration of endothelial cells and angiogenesis, HTN, and increased serum levels of triglycerides and cholesterol. On the other hand, this agent is cardioprotective via reducing infarct size by acting against reperfusion injury after Myocardial Infarction (MI).

Mycophenolatemofetil: This drug decreases systolic, diastolic and mean blood pressure in patients with pre-existing essential HTN. Additionally, it decreases inflammation in atherosclerotic plaques and may also decrease platelet aggregation.

Methotrexate: Most studies particularly in patients with rheumatoid arthritis have shown that methotrexate reduce the risk of CVD, MI, cerebrovascular disease, and atherosclerosis.

TNF-α inhibitors: TNF-α inhibitors modify C-reactive protein, VEGF, and resistin. C-reactive protein is a predictor for MI, peripheral arterial disease, and sudden cardiac death. Resistin is associated with insulin resistance. Hence, these agents are associated with improved endothelial function, improved insulin resistance, and decreased risk of atherosclerosis and MI. However, heart failure is a well-known concern in treatment with TNF- α inhibitors, because they increase hospitalizations, morbidity, and mortality related to this disease.

IL-12/23 inhibitors: Studies have shown controversial results about the association of IL-12/23 inhibitors with CVD. Some studies have revealed linking of these agents with major adverse cardiovascular events, but in other studies, neither a beneficial nor detrimental effect of these agents has been reported.

Commentary: Hugh et al concluded that TNF-α inhibitors and methotrexate are the best systemic treatments for psoriasis in the setting of CVD or its risk. At the end they, they recommended the following: BP, pulse, and body mass index measurments every 2 years; fasting blood glucose and lipid levels every 5 years or every 2 years if patients have additional risk facors; and assessment of joint status at every visit.

Reference

1. Hugh J, Van Voorhees AS, Nijhawan RI, Bagel J, Lebwohl M, Blauvelt A, et al. From the Medical Board of the National Psoriasis Foundation: The risk of cardiovascular disease in individuals with psoriasis and the potential impact of current therapies. J Am Acad Dermatol. 2014; 70: 168-177.

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