Relationship between psoriasis treatments and cardiovascular risk explained

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Psoriasis is a chronic disease that causes patients to develop patches of dry, scaly, itchy skin. It is an autoimmune disorder, which means that it arises from a person's immune system inappropriately targeting that

person's own body. It is a deeply unpleasant condition, and patients commonly take medications so that they can live their lives more comfortably.

Professor Min Chen of the Chinese Academy of Medical Sciences and the Peking Union Medical College has conducted extensive research on psoriasis. "There are many patients with psoriasis who also have cardiovascular diseases, such as hypertension, diabetes, hyperlipidemia and coronary heart disease," she notes. The presence of such cardiovascular diseases is an important consideration when treating patients with psoriasis because, as Prof. Chen explains, "Some of the drugs for psoriasis may increase the risks of these diseases, while some can reduce them." Now, in a recent review article published in *Chinese Medical Journal*, Prof. Chen and her colleagues provide a summary of the existing scholarly knowledge concerning the associations between the different treatments for psoriasis and risks of cardiovascular diseases.

The authors explore how various drugs influence the long-term risks of what is known as MACE, an acronym that encompasses myocardial infarction (i.e., heart attack), cerebrovascular accidents (i.e., strokes and similar events), and cardiovascular mortality. They note that some psoriasis treatments such as tumor necrosis factor-α (TNF-α) inhibitors and methotrexate may actually reduce long-term MACE risk. Conversely, they also note that some interleukin (IL) inhibitors may increase MACE risk. For example, the IL-12/23 inhibitor briakinumab increased MACE risks so much across multiple studies that investigators had to suspend all clinical trials. However, other IL inhibitors such as tildrakizumab and guselkumab do not appear to increase MACE risks. The widely used immunosuppressant cyclosporine A can cause damage to heart muscle tissues. Ultimately, these findings indicate that more research is needed before scientists can rank psoriasis treatments in terms of their effects on long-term MACE risks.

There is currently no consensus among medical scientists on whether systemic treatments for psoriasis can mitigate or worsen arterial plaques, vascular function, and vascular inflammation. There is some evidence that treatments for psoriasis counter inflammation of coronary tissues and can lessen the coronary plaque burdens that contribute to coronary artery disease. Conversely, it has also been found that treatment with TNF-α inhibitors may contribute to an undesirable thickening of the carotid arteries, which are found in the neck and provide blood to the head. Scientists do not yet know whether methotrexate, IL-17 inhibitors, and IL-12/23 inhibitors also have any effect on arterial wall thicknesses.

In addition to the heightened risk of cardiovascular diseases, patients with psoriasis are at an increased risk of developing various risk factors for cardiovascular diseases. These risk factors include obesity, diabetes mellitus, and high blood lipid levels, and the existing literature points to several varied relationships between psoriasis treatment options and risk factors for cardiovascular disease. For example, TNF-α inhibitors may contribute to increased body weight, but IL-17 and IL-12/23 inhibitors may help patients lose weight. Cyclosporine A can increase the risk of diabetes, worsen hypertension, and contribute to unhealthy lipid metabolism profiles.

In conclusion, different psoriasis treatments have different effects on cardiovascular diseases and their risk factors, necessitating a more thorough consideration of each patient's clinical situation before picking a treatment. For example, TNF-α inhibitors and methotrexate are good therapeutic options for patients with psoriasis who are at high risk of experiencing MACE, and inhibitors of IL-17 and IL-12/23 may be beneficial for patients who have arterial plaques.

Prof. Chen expresses hope that these findings will help medical practitioners offer "sound medication advice for patients with psoriasis and cardiovascular complications."

More information: Li-Qing Shi et al, Association between the systemic treatment of psoriasis and cardiovascular risk, *Chinese Medical Journal* (2021). DOI: 10.1097/CM9.0000000000001249