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Psoriasiform lesions as a side effect of SGLT-2 therapy

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Abstract

SGLT-2 inhibitors (flozins) are one of the new classes of anti-diabetic drugs, used from 2012. They are highly recommended in case of intolerance or contraindication of metformin, but in Poland they are used usually as third-line drug after metformin and sulfonylurea. Their growing popularity is caused by their significance in cardiovascular risk reduction and preventive role in according to diabetes complications like chronic kidney

disease, or diabetes-induced dementia. The aim of this article is to summarize the knowledge on the risk of psoriasis development in diabetic patients treated with flozins.

In accordance with the newest studies, flozins may be considered as a pro-psoriatic factor, increasing the risk of this skin disease, especially in patients with diabetic kidney disease. But on the other hand, SGLT-2 inhibitors have a significantly decreasing effect on cardiovascular risk, which is increased in psoriatic patients.

Keywords: flozins, SGLT-2 inhibitors, psoriasis, diabetes, diabetic kidney disease, diabetology, dermatology

Introduction

SGLT-2 inhibitors (flozins) are one of the new classes of anti-diabetic drugs, used from 2012. They are highly recommended in case of intolerance or contraindication of metformin, but in Poland they are used usually as third-line drug after metformin and sulfonylurea[1]. Their growing popularity is caused by their significance in cardiovascular risk reduction[2, 3] and preventive role in accordance with diabetes complications like chronic kidney disease[4], or diabetes-induced dementia[5].

In the courses of both diabetes and psoriasis, patient's lifestyle has significant impact on[6–8]. Nevertheless, those disorders have significant impact on each other – due to diabetic changes in skin physiology [9–11]. An average prevalence of type 2 diabetes in psoriasis patients is 11.6%[12]. A crucial element of psoriasis etiopathogenesis is chronic inflammation, which results up with keratinocytes damage[8], and may be caused by adipose tissue secretion of hormones (adipokines) and proinflammatory cytokines[13, 14].

The aim of this article is to summarize the knowledge on the risk of psoriasis development in diabetic patients treated with flozins.

Methods

To collect necessary articles, the literature review was performed using two databases – PubMed and GoogleScholar. Used keywords included “SGLT2 inhibitors” and “psoriasis”, or synonyms of those two. Articles written in languages other than Polish and English were rejected.

State of the art

At first, the anti-inflammatory properties of SGLT-2 inhibitors were considered to play a key role in the treatment of both diabetes and other pathological conditions with inflammation [15] . Additionally, psoriasis is considered as an independent factor of cardiovascular diseases - and its risk reduction by flozins is evidenced, so the intake of SGLT-2 inhibitors by psoriatic patients may be considered as useful[16, 17].

Flozins may have an anti-inflammatory effect by modulating the NLRP3 inflammasome and IL-17 and IL-23 inflammatory axis, which are involved in the etiopathogenesis of psoriasis[18, 19].

The first study on psoriatic risk in diabetic patients treated with flozins was performed in 2018. On the one hand, the study was performed using central Japanese database of drug adverse events, but on the other hand the skin lesions and disorders were analyzed in general (psoriasis was not analyzed in separation from another). In this study only the ipragliflozin was appointed as a plausible factor for skin disorders occurrence[20].

The newest study about the potential pro-psoriatic effect of SGLT-2 inhibitors is a population-based study conducted in Taiwan. The study results' indicate that SGLT-2 inhibitors rises 2,7 times the risk of psoriasis in patients with diabetic renal disease[21].

On the other hand, in compare to other anti-diabetic agents, metformin and sulfonylurea drugs are considered to have bigger risk of cutaneous side effects, including psoriasiform[22].

Conclusion

In according to the newest studies, flozins may be considered as a pro-psoriatic factor, increasing the risk of this skin disease, especially in patients with diabetic kidney disease. But on the other hand, SGLT-2 inhibitors have significantly decreasing effect on cardiovascular risk, which is increased in psoriatic patients.

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