

Metformin effect on recovery of acanthosis nigricans in patients in diabetes clinic of Gorgan city

S. Hezarkhani¹, S. Sedighi^{1,*}, M. Aghaei¹, M. Hosseini², N. Taheri³, N. Shahini², N. Shahini⁴

¹Department of Internal medicine, Golestan University of Medical Sciences, Gorgan, Iran.

²Student Research Committee, Golestan University of Medical Sciences, Gorgan, Iran

³Golestan Research center of Gastroenterology and Hepatology, Golestan University of Medical Sciences, Gorgan, Iran.

⁴Student Research Committee, Mazandaran University of Medical Sciences, Mazandaran, Iran

Background and Aims: Acanthosis nigricans (AN) is a skin disorder characterized by focal or diffuse hyperkeratosis symmetric hyperpigmentation of the skin and oral cavity mucosa, but most commonly at the axillae, neck, groin, and flexural surfaces. AN in obese adolescents is frequently associated with hyperinsulinemia and insulin resistance. Several drugs including metformin, octreotide, retinoids and topical colecalciferol (vitamin D(3)) analogs are also beneficial in clearing AN. We conducted this study to evaluate the effect of metformin on AN in patient referred to diabetes clinic of Gorgan.

Methods: On basis of including criteria by block balanced randomization two groups of 25 patients were recruited, we registered BMI, A1C, and age. Then a group as case group received metformin and the other received placebo for six month. This study was double blind. After six months we measured them again, then analyzed with SPSS, t-test and Chi-square test.

Results: In case group recovery of AN in all range of age was the same, in placebo group in all range of age we didn't have cure. In metformin group BMI reduced 0.31 kg/m²(0.9%) p:0.019 but reduction in all range of BMI was the same (p:0.08). In placebo group BMI increased 0.358 kg/m²(1.07%)(p:0.000)and it was the same in all range(p:0.83). In metformin group HbA1c reduced 0.224 (3.9%)(p:0.000). In placebo group it increased 0.188 (3.4%) (p:0.000).

Conclusions: Our data showed that age has no effect on recovery of AN. Reduction of BMI and HbA1c have effect on recovery of AN. And finally metformin has role in recovery of AN.

Keywords: Acanthosis nigricans; Metformin; Diabetes