GLOBAL SKIN HEALTH

STUDY OF COLLAGEN THROUGH IMMUNOHYSTOCHEMISTRY WITH THE USE OF ORAL ISOTRETINOIN IN THE TREATMENT OF PHOTOAGING

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Introduction: The off-label prescription of oral isotretinoin in the treatment of photoaging has been used on many occasions but with little scientific subsidy. There is only one study that estimates the durability of its recognized ability to trigger dermal collagen remodeling.

Objective: It was evaluated through immunohistochemistry, the quality and the duration of the effects of isotretinoin on the expression of collagen fibers I and III in the skin through morphometry and, with a semiquantitative methodology, the behavior of metalloproteinases (MMPs) -1, -3, -7, -9, -12 and the tissue inhibitor of MMP type-1 (TIMP-1).

Materials and Methods: The material was the skin of 20 women between 45 and 50 years old in pre-menopausal period, degree of facial aging 2 and 3 of Glogau, with phototypes between II and V, who underwent treatment with oral isotretinoin 20 mg three times a week for 12 weeks. The specimens were samples of the left pre-auricular skin and were compared at three different moments: pretreatment (M0), posttreatment (12 weeks, M1) and 12 weeks after (M2).

Results: The results showed that collagen I and III increased with statistical significance in M1 (50,7%; p = 0.012), but not in M2 (49,7%). However, M2 was higher than M0 (47,2%). Furthermore, in M1, the collagen III augmentation had a higher statistical significance than collagen I. MMP-9 presented a decreased activity with statistical significance in M1 (p = 0.047) and M2 (p = 0.058). MMP-1 showed a reduction only in M2 (p = 0.015). MMPs -3, -7, -12 and TIMP-1 did not present any significant modification in their expressions during the treatment.

Conclusions: This study found that the use of oral isotretinoin is associated with the

increase of dermal collagen I and III with a durability of at least 12 weeks after treatment was interrupted.