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Differential expression of preoteoglycans in intrinsic and extrinsic skin ageing

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INTRODUCTION

Skin ageing is a multifactorial process consisting of two distinct and independent components: intrinsic ageing which affects the skin in the same pattern as it affects all internal organs and extrinsic ageing. Extracellular matrix molecules, like hyaluronan, are highly implicated in both processes (1). Proteoglycans are major components of the extracellular matrix of the skin. However, they have been poorly studied in intrinsic and extrinsic skin ageing. In the present study we have tried to elucidate the involvement of certain important proteoglycans in intrinsic and extrinsic skin ageing in humans.

METHODS

Facial photo-protected and photo-exposed skin tissue specimens were collected from 10 male (mean age 73.3) and 6 postmenopausal female (mean age 67) patients. Photo-protected skin tissue specimens were also obtained from juvenile (mean age 5 years) patients. Gene expression of versican 1, versican 0, biglycan, decorin, aggrecan, perlecan and syndecan-3 was analyzed using RT-PCR.

RESULTS

Gene expression of versican 1, versican 0, biglycan, decorin, perlecan and syndecan-3 was down regulated in intrinsic skin ageing, whereas the exception of aggrecan, was up regulated. Extrinsic skin aging was associated with decreased expression of perlecan and decorin and increased expression of versican 0, versican 1 and aggrecan. Biglycan and syndecan-3 remained practically unaltered.

CONCLUSIONS

The differential expression of proteoglycans in extrinsic and intrinsic skin ageing indicate that these extracellular matrix molecules are involved in skin ageing and may offer novel pharmacological targets to confront skin ageing.

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