Case Report

Treatment of facial infantile hemangioblastoma with local application of dobesilate cream

Abstract

Hemangioblastoma is a benign tumour. Fibroblast growth factor (FGF) plays an important role in the onset and progression of this condition. This study describes the efficacy and safety of application of dobesilate cream (an inhibitor of FGF) after 30 days of treatment in a child suffering a facial hemangioblastoma.

Keywords: hemangioblastoma, dobesilate, fibroblast growth factor, vascular endothelial growth factor

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Abbreviations

FGF: fibroblast growth factor

VEGF: vascular endothelial growth factor

Introduction

Hemangioblastoma is a benign tumour characterized by an intense vascularization in which no specific treatment exists nor has been approved. We have reported previously that calcium dobesilate (a specific inhibitor of fibroblast growth factor) can be used safely in angiogenesis-dependent pathological conditions,[1-3] because specific inhibition of FGF does not affect normal vasculature.[4] Here we show the efficacy of dobesilate used as a topic cream in the face of a lactate affected with hemangioblastoma.

Case presentation

A child presented with a facial hemangioblastoma (Figure 1, upper panel). Hemangioblastomas are highly vascularized tumours originated in the central nervous system. Epidemiology of hemangioblastoma constitutes 1,5-2,5% of intracranial tumours.[5] This tumour is located predominantly in the skin of the face, neck and trunk of lactates and children. Current treatment of cutaneous hemangioblastoma with propranolol, corticosteroids, interferon-α and aspirin.[6,7] have been proposed for hemangioblastoma management, intending to reduce growth and complications such as ulceration or bleeding. However, propranolol and corticosteroids show side effects.[8,9] Fibroblast growth factor (FGF) and vascular endothelial growth factor (VEGF) signals participate synergically in vasculopathies and tumour angiogenesis as well as in hemangioblastoma.[10-12] Signed consent information was obtained from legal responsible of the infant. Dobesilate cream was pharmacologically prepared at the Hospital Universitario Ramón y Cajal in Madrid. During one month, Dobesilate cream was applied twice a day on the child face. Figure 1 (lower panel) shows a reduction in the intensity of the reddish coloration of the lesion. After treatment, no cosmetic skin alterations were observed.

Figure 1 Photographs showing the effects of a topical treatment with a cream comprising dobesilate (2.5%) in a child suffering from hemangioblastoma. Upper panel shows the appearance of the child before treatment and lower panel the child after topical treatment with dobesilate applied twice a day for 1 month. A decrease in the intensity of the coloration of the hemangioblastoma may be clearly observed.

Discussion

Angiogenesis consists in the growth of new blood vessels from preexisting ones and is a normal process in growth, development, female reproductive cycle and wound healing. However, it is also a key element in the pathogenesis of angiogenesis-dependent diseases.[13] An important role of both FGF and VEGF signalling pathways has been postulated in angiogenesis as well as in the onset and progression of hemangioblastoma.[14-18] Dobesilate is an antagonist of FGF and VEGF activities which inhibits some of these, such as angiogenesis. [1,19] This is consistent with the here reported efficacy of topical dobesilate in ameliorating infantile hemangioblastoma. Since targeted inhibition of FGF in tissues undergoing pathological angiogenesis is safe and doesn't present significant effects in normal tissues,[4] dobesilate is an attractive drug to be considered for treating cutaneous hemangioblastoma.

Conclusion

Targeting angiogenesis through the modulation of FGF and VEFG levels might be a promising therapy for cutaneous hemangioblastoma management.

Acknowledgments

None.

Conflicts of interest

The authors declare no conflict of interest.

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