Junctional adhesion molecule-A is abnormally expressed in diffuse cutaneous systemic sclerosis skin and mediates myeloid cell adhesion

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ABSTRACT

Objective. Junctional adhesion molecule-A (JAM-A) is abnormally expressed in diffuse cutaneous systemic sclerosis (SSc). JAM-A plays a prominent role in promoting angiogenesis. Here we determined the role of JAM-A in the pathogenesis of SSc.

RESULTS

INTRODUCTION

Junctional adhesion molecule-A (JAM-A) is over-expressed on SSc dermal macrophages and fibroblasts, indicating a possible role in mediating myeloid cell adhesion.

MATERIALS AND METHODS

Within parallel preparations, sequential skin biopsies were obtained from subjects with SSc, SSc and normal skin. JAM-A expression was assessed by immunohistochemistry and Western blot analysis of skin extracts.

METHODS

Sections from paired skin samples were stained with CD68, CD45, and CD3. Immunohistochemistry was performed using the avidin-biotin-peroxidase complex method. Immunofluorescence methods were used to study the localization of JAM-A in vivo. Immunohistochemistry was performed using the avidin-biotin-peroxidase complex method. Immunofluorescence methods were used to study the localization of JAM-A in vivo.

Figure 1. The concentration of sJAM-A in SSc serum (2.36±0.41 ng/ml) is significantly increased compared to NL serum (1.18±0.21 ng/ml) (n=17) (n=12), respectively. p<0.05 was considered significant.

Figure 2. Distal SSc skin has fewer blood vessels than NL skin.

Figure 3. JAM-A expression is decreased on SSc dermal ECs vs. normal ECs.

Figure 4. JAM-A is overexpressed in SSc dermal fibroblasts.

Figure 5. JAM-A mediates U937 cell binding to SSc dermal fibroblasts.

Figure 6. JAM-A mediates U937 cell binding to SSc skin.

CONCLUSIONS

Taken together, these results may help us understand disordered angiogenesis in SSc.