The imbalance of AGE-RAGE in idiopathic pulmonary fibrosis

ORAL COMMUNICATION

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RATIONALE

Accelerated aging process has been linked with the altered wound healing in the pathogenesis of idiopathic pulmonary fibrosis (IPF). The advanced glycation end-products (AGEs), produced as a consequence of non-enzymatic reactions between lipid and protein with several oxidants, have been described in the aging process. The receptor for AGEs (RAGE) is involved in the alveolar homeostasis, and it presents two isoforms with different functions: full length RAGE, FL-RAGE, and soluble RAGE, sRAGE, which transduce their signal into the cell and arrest the AGEs, respectively. However, scarce literature refers to AGEs and RAGEs in IPF.

METHODS

Lung samples from 16 IPF and 9 control patients were obtained through surgical lung biopsy. AGEs and RAGE expression were assessed by using RT-PCR, Western-blot and immunohistochemistry.

RESULTS

Our study demonstrates an increase of the AGEs together with a decrease in the RAGEs in IPF patients compared with control samples. Immunohistochemistry showed higher staining of AGEs related with proteins from the ECM, but also on the apical surface from AECs surrounding fibroblast foci; while control samples showed a weak and discontinuous staining localized in AECs and strong staining in the endothelium. On the other hand, immunohistochemistry showed that RAGE localization was restricted to the cell membrane surface of AECs in control lungs, while it was almost missing in pulmonary fibrotic tissues.

CONCLUSIONS

All of these findings suggest a possible role of the imbalance between AGEs and RAGEs in IPF, which could be relevant in the abnormal wound healing of the lung fibrotic process.