Review

Transforming growth factor β and cardiovascular diseases: the other facet of the ‘protective cytokine’

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Abstract:
Transforming growth factor β (TGF-β) is a cytokine engaged in a wide range of diverse and often contradictory functions. Its effect on the cardiovascular system is also ambiguous; on the one hand, there is a strong evidence for so-called 'protective cytokine hypothesis' considering TGF-β to be an anti-atherogenic and plaque-stabilizing factor, but on the other hand, TGF-β has been proven to exert some proinflammatory effects. Moreover, besides the positive aspect of a profibrotic and reparative action of TGF-β, there are also some disadvantages: TGF-β plays a significant role in postangioplasty restenosis, post-infarction myocardial remodeling (resulting in the development of heart failure) and in numerous other circulatory disorders where fibrosis and vascular remodeling takes part in pathology.

The aim of the paper was to review and discuss the unwanted effects of TGF-β in the circulatory system, and to outline the possible pharmacological strategies to interfere with TGF-β-dependent pathways and prevent these disturbances.

Key words:
transforming growth factor β, postinfarct remodeling, restenosis