

Assesment of SDF-1 and Ang-1 and Ang-2 in children with growth hormone deficiency before and after 1- year therapy with recombinant growth hormone



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The authors have nothing to disclose.

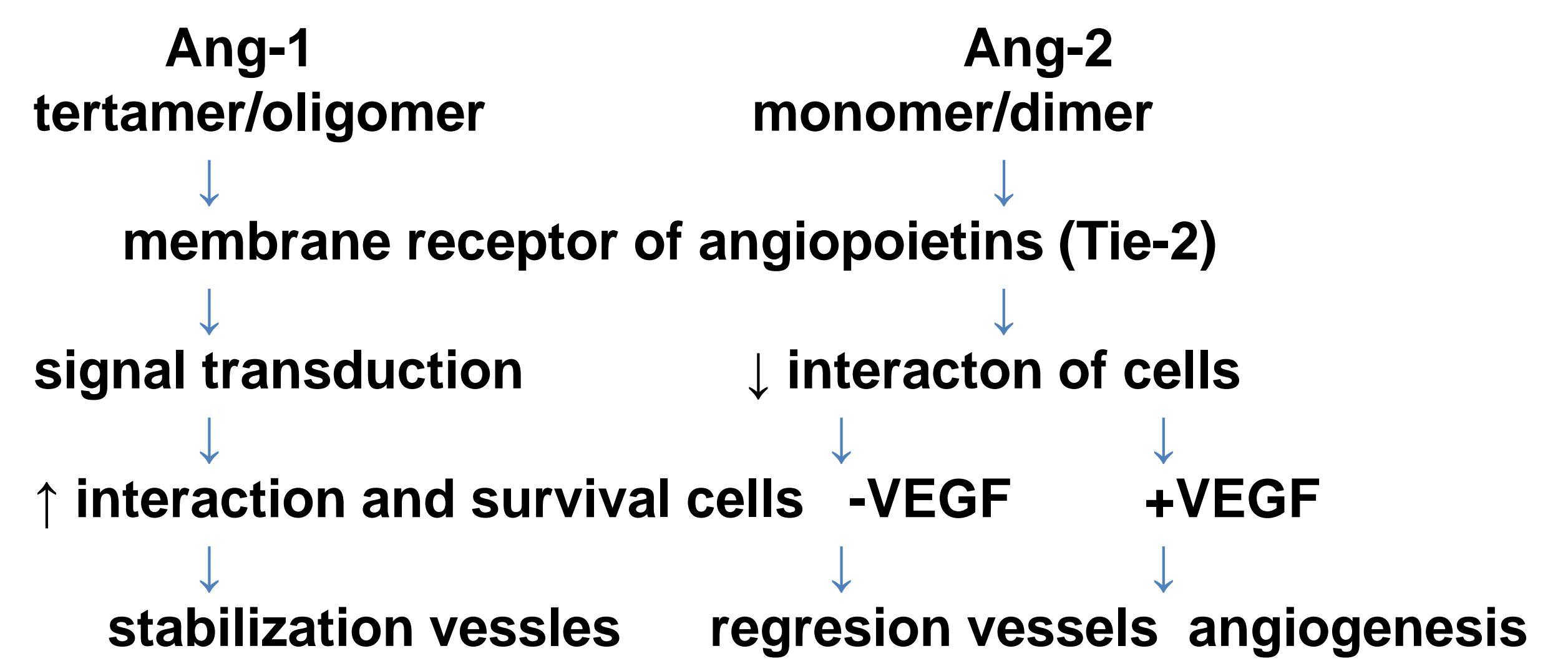
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Introduction

Angiopoietins are necessary for development, differentiation and stabilization vessels progress. Angiopoietin 1 (Ang-1) is responsible for vascular integrity, through stimulation of endothelial cell migration and adhesion, and inhibition of apoptosis. Action of angiopoietin 2 (Ang-2), in the absence of VEGF it Leads to vascular regression, but in the presence of high VEGF concentration it stimulates angiogenesis. Stromal derived factor (SDF-1) play an important role in stem cells mobilization from bone marrow to the peripheral blond, what increases as a result of tissue injury. During therapy recombinant growth hormone (rGH) in patients with growth hormone deficiency (GHD) supply of increasing growth factors and a lot of processes development of cells.

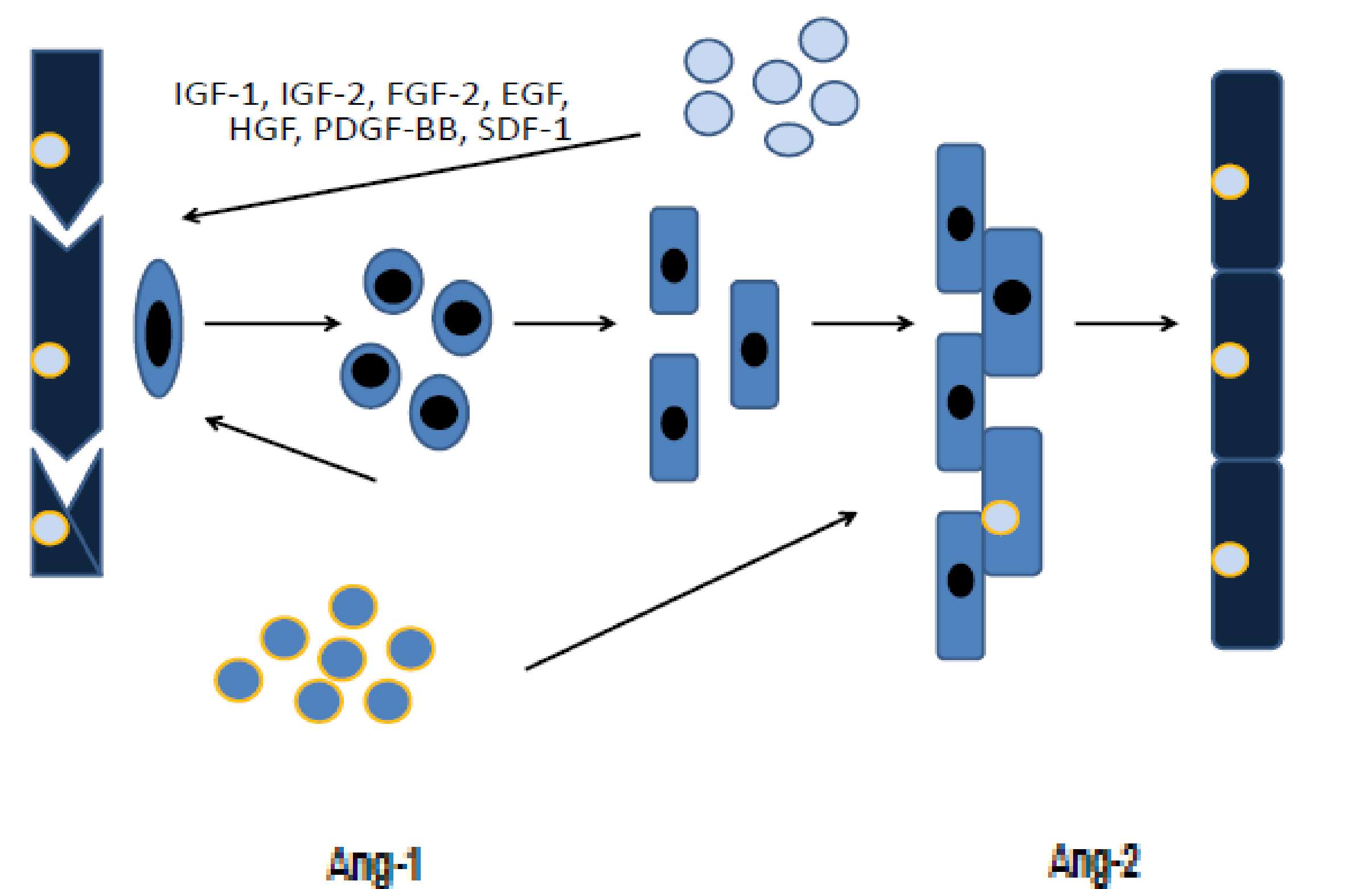
Mechanism of angiopoietins' activity



Aim, materials and methods

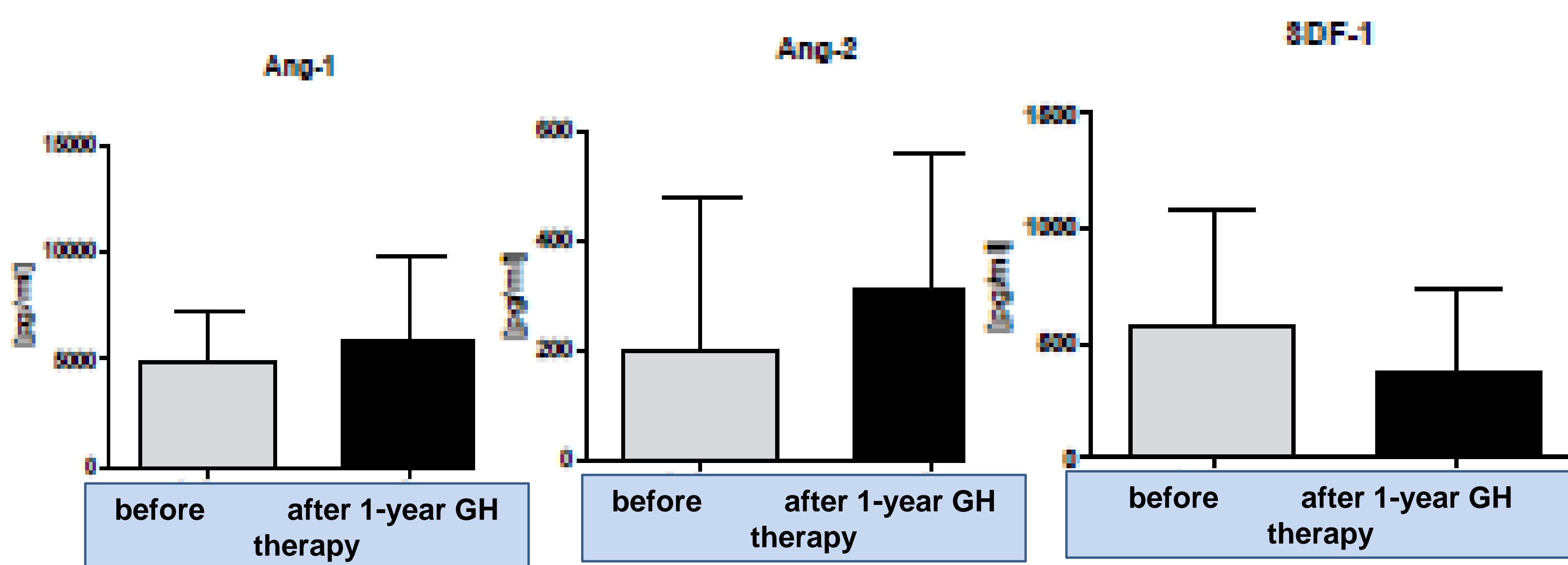
The aim of the study was to estimate the concentration of angiopoietins 1 (Ang-1) and 2 (Ang-2) and stromal derived factor (SDF-1) in children with growth hormone deficiency before and after 1-year therapy with recombinant growth hormone. Anthropometric parameters (height, weight, BMI) and levels of angiopoietin (Ang-1 and Ang-2) and stromal derived factor (SDF-1) were measured in 32 children with GHD before and during GH therapy. The control group comprised 16 healthy, age and sex matched children. Ang-1, Ang-2 and SDF-1 levels were determined with ELISA.

Muscles regeneration



Results

Comparing to control group SDF-1 level decreases statistically significant ($p < 0,05$) in the group with GHD and was demonstrated tendency to slightly decrease without statistical significance ($p > 0,05$) in group treated with GH. Without statistically significant correlations ($p > 0,05$) Ang-1 and Ang-2 decrease in group with GHD comparing to control group. Increasing levels of Ang-1 and Ang-2 ($Ang2 > Ang1$) was observed after 1-year therapy.



Conclusions

In conclusion, GHD connect with decreasing stromal derived factor (SDF-1) and angiopoietin may play an important role in impaired regeneration and development new cells. SDF-1 could be monitoring of patients response to therapy with GH.

