Letters to the Editor

The Editor welcomes submissions for possible publication in the Letters to the Editor section that consist of commentary on an article published in the Journal or other relevant issues. Authors should:

- Include no more than 500 words of text, three authors, and five references
- Type with double-spacing
- See <http://jtcs.ctsnetjournals.org/misc/ifora.shtml> for detailed submission instructions.
- Submit the letter electronically via jtcvs.editorialmanager.com.

Letters commenting on an article published in the JTCVS will be considered if they are received within 6 weeks of the time the article was published. Authors of the article being commented on will be given an opportunity to offer a timely response (2 weeks) to the letter. Authors of letters will be notified that the letter has been received. Unpublished letters cannot be returned.

Vascular endothelial growth factor before cells

To the Editor:

In a recent article by Chachques and associates,¹ the authors compared locally delivered vascular endothelial growth factor (VEGF) administration versus isolated or combined delivery of skeletal myoblasts and VEGF in an ovine model of myocardial infarction. The investigators demonstrated decreased left ventricular dilation and improved contractility (regional fractional area change) regardless of VEGF administration. The author concluded that “further studies are warranted on prevascularization of myocardial scars with angiogenic therapy.”

In the April 2004 issue of this journal, we demonstrated improved survival of transplanted fetal cardiomyocytes in a rat infarct model and improved exercise tolerance of these animals with pretreatment of the infarct with VEGF 3 weeks before cell implantation.² We used this delayed interval, based on our earlier studies examining the angiogenic effects of VEGF,³ because we believed that it would allow critical time for angiogenesis to develop, thereby providing perfusion and supporting the survival of subsequently implanted cells.

We have subsequently duplicated these findings by using skeletal myoblast implantation. In these animals, the left ventricular ejection fraction was significantly improved in rats that were pretreated with VEGF and that later received skeletal myoblast transplants compared with control animals that received cells alone or VEGF

and cells as a simultaneous treatment. This is noteworthy in that skeletal myoblasts have been perceived to be “hardier” than fetal cardiomyocytes or other cell implant types, but angiogenic pretreatment proved to be beneficial in this case as well.

In light of our findings, we agree with Chachques and colleagues and believe that angiogenic pretreatment may be a critical component of cellular cardiomyoplasty strategies for the treatment of myocardial infarction.

Todd K. Rosengart, MD

Edgar G. Chedrawy, MD

Gerald Patejunas, PhD

Mauricio Retuerto, BS

Department of Cardiothoracic Surgery

Evanston Hospital

Evanston IL 60201

References

1. Chachques JC, Duarte F, Cattadori B, Shafy A, Lila N, Chatellier G, et al. Angiogenic growth factors and/or cellular therapy for myocardial regeneration: a comparative study. *J Thorac Cardiovasc Surg.* 2004;128:245-53.
2. Retuerto MA, Schalch P, Patejunas G, Carbray J, Liu N, Esser K, et al. Angiogenic pre-treatment improves the efficacy of cellular cardiomyoplasty performed with fetal cardiomyocyte implantation. *J Thorac Cardiovasc Surg.* 2004;127:1041-50.
3. Magovern CJ, Mack CA, Zhang J, Rosengart TK, Isom OW, Crystal RG. Regional angiogenesis induced in non-ischemic tissue by an adenovirus vector expressing vascular endothelial growth factor. *Hum Gene Ther.* 1997;8:215-27.

doi:10.1016/j.jtcvs.2004.11.018