

[023] Early Experience in the US with Intramyocardial Injection of Fibroblast Growth Factor -1 for Refractory Angina

Lynne E. Wagoner, Daniel D. Snavely, Ginger A. Conway, Elizabeth A. Hauntz, Walter H. Merrill. Division of Cardiology, University of Cincinnati, Cincinnati, OH; Division of Cardiothoracic Surgery, University of Cincinnati, Cincinnati, OH

Coronary heart disease remains the leading cause of death and heart failure in the US. Despite advancing technology a significant number of patients have refractory angina not amenable to revascularization by medical, interventional or surgical means with a negative impact on quality of life. Fibroblast growth factors (FGF) have been shown to induce angiogenesis in ischemic territories. The only study to evaluate the efficacy of intramyocardial injection of FGF-1 as sole therapy was done in Europe by Stegmann *et al.*

Methods: The protocol for a Phase I, open label, dose escalation, multicenter trial underway in the US to evaluate safety, and effectiveness of human FGF-1 for refractory angina pectoris was approved by the IRB. Eligible subjects had a ≥ 3 month history of refractory CCS Angina Class III to IV triggered by minimal physical effort despite optimal management and were not candidates for revascularization. Proof of reversible myocardial ischemia and LVEF of $\geq 30\%$ was required. At baseline subjects underwent a physical exam, fundoscopic exam and laboratory tests, CCS Angina scores and Seattle Angina Questionnaires (SAQ). Myocardial SPECT-thallium, rest and stress echocardiograms, and coronary angiography with left ventriculography were performed. The intramyocardial administration of FGF-1 was administered via mini-thoracotomy. Each patient received two injections of 1 μ g FGF-1/kg. Testing was repeated after 12 weeks.

Results: Evidence of increased area of contrast distribution and myocardial blush via angiography and of increased perfusion via SPECT was noted in the treatment areas. CCS Angina Class improved (Figure 1) as did SAQ scores when compared to baseline. No major adverse cardiac events, malignancies, or ophthalmologic changes were seen during the 12 week follow-up. **Conclusion:** Intramyocardial injection of FGF-1 appears to be safe. The early results are promising in improving patients' quality of life and ability to function in daily living. We await the results of the entire 32 patient cohort.

Monday, September 13, 2004

Moderated Poster