revascularization) without TLR (target lesion revascularization) was higher in those with re-treatment compared to no re-treatment (19.2% vs. 3.4%, p=0.02).
Conclusions: Re-treatment after gamma radiation is performed in one-third cases, often resulting in additional stent implantation. Re-treatment is associated with increased TVR at follow-up, probably due to injury outside the irradiated segment. If re-treatment is required, vigorous efforts to avoid injury to inadequately irradiated vessel segments and additional stenting should be made.

| | No re-treatment | Re-treatment | p Value |
|---|---|---|---|
| New stents (%) | 12 | 42 | <0.01 |
| Reference diam (mm) | 2.84±0.45 | 2.86±0.40 | 0.8 |
| Lesion length (mm) | 18.1±8.6 | 20.1±9.1 | 0.2 |
| Pre-MLD (mm) | 0.60±0.44 | 0.58±0.42 | 0.8 |
| Final MLD (mm) | 2.69±0.53 | 2.68±0.52 | 0.9 |
| In-hosp MACE (%) | 0 | 2.1 | 0.3 |
| 9-month MACE (%) | 13.1 | 11.1 | 1.0 |
| 9-month death (%) | 2.1 | 0 | 1.0 |
| 9-month MI (%) | 2.1 | 8.9 | 0.08 |
| 9-month TVR (%) | 12.1 | 22.2 | 0.14 |
| 9-month TLR (%) | 10.1 | 6.7 | 0.8 |
| 9-month TVR without TLR (%) | 3.1 | 17.8 | <0.01 |

### 1196-22 Efficacy of Gamma Vascular Brachytherapy for Ostial Versus Nonostial In Stent Restenotic Lesions

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Background: In stent restenosis (ISR) involving the coronary ostium is associated with high recurrence rates after conventional treatment compared to non-ostial lesions. Whether Gamma vascular brachytherapy (GVBT) significantly improves these outcomes is not known. Methods: Pts with native ostial coronary lesions (N=45) were selected from a pooled angiographic database of pts enrolled in Vascular Brachytherapy (VBT)trials for treatment of ISR and were compared to 232 pts with non-ostial lesions, matched for lesion length. Baseline and follow-up quantitative coronary angiographic (QCA) analysis were assessed and compared. Results: At baseline pts with ostial lesions had more complex lesions (ACC/AHA > B1: 73.3% vs. 53.8%, p<0.05), with more total occlusions (8.9% vs. 3.0%, p=0.08) compared to non-ostial pts. QCA results are presented in the table.
Patients with VBT failure had a significant reduction in lesion length regardless the lesion location: ostial (14.2±9.49 to 6.94±3.69,p<0.05) and non-ostial (16.66±6.71 to 8.61±6.52, p<0.005).There were no difference in stent edge restenosis (6.7% vs. 9.1%,p=0.77) Conclusions: Gamma radiation is at least as effective for treatment of ostial in-stent restenotic lesions as non-ostial lesions, decreasing restenosis by 54% compared to non-ostial lesions. The difference was not related to edge restenosis.

| QCA analysis | Ostial | Non-Ostial | p Value |
|---|---|---|---|
| Lesion length Pre(mm) | 14.2±9.4 | 16.6±6.7 | 0.25 |
| Lesion length FU(mm) | 6.9±3.6 | 8.6±6.5 | 0.07 |
| Reference (mm) | 2.71±0.39 | 2.61±0.46 | 0.15 |
| Final DS% | 26.9±14.5 | 27.8±12.2 | 0.67 |
| FU DS% | 36.8±21.7 | 47.2±25.1 | 0.009 |
| Late Loss (mm) | 0.31±0.58 | 0.52±0.70 | 0.05 |
| Restenosis (%) | 17.8 | 32.8 | 0.04 |

### 1196-23 Repeat Intracoronary Radiation for In-Stent Restenosis in Patients Who Failed Radiation Therapy: Re-WRIST

Ron Waksman, Andrew E. Ajani, Edouard Cheneau, Rosanna C. Chan, Bill G. Bass, Katayoun Khosravani, Augusto D. Pichard, Lowell F. Satler, Kenneth M. Kent, Ellen Pinnow, Joseph Lindsay, *Washington Hospital Center, Washington, Dist. of Columbia.*

**Background:** Intracoronary Radiation (IR) is proven as an effective therapy to prevent recurrences of in-stent restenosis (ISR). However nearly 20% of the patients (pts) enrolled in radiation studies for ISR required repeat revascularization to the irradiated site. Re-WRIST (Washington Radiation for In-Stent Restenosis Trial) is a registry evaluating the safety and efficacy of re-treatment with IR in pts with refractory ISR.
**Methods:** Patients with ISR who had recurrence of stenosis at a previously irradiated segment and failed a subsequent additional angioplasty were eligible for re-treatment with IR, if evaluated as a poor surgical candidate. In Re-WRIST, the radiation system is a 0.0030-inch nylon ribbon containing 192Ir seeds manufactured by Best Industries delivered into a non-centered end lumen delivery catheter (Cordis 4F or Medtronic 5F). The prescribed dose is 15 Gy to a 2 mm radial distance from the center of the source. All pts receive 6 months of clopidogrel post-procedure. Patients are followed clinically, angiographically and by IVUS at 6 and 24 months.
**Results:** At present, 9 pts have been enrolled in the Re-WRIST registry. The mean age of the cohort is 65 ± 10yrs (4 males, 3 diabetics and 7 pts had previous CABG). Five ISR lesions were in native coronary arteries, 3 in saphenous vein grafts and one in left internal mammary artery. The mean time interval between radiation treatments is 18 months (range 6.4-28.9) and the mean number of previous interventions to the target lesion is 4.1 ± 1.5. The radiation was delivered successfully in all pts with no procedural or hospital complications. Balloon angioplasty alone was performed in 6 of 9 pts, 2 pts were treated with the excimer laser and 1 pt with the cutting balloon. None of the pts received additional stents. At 30 days, there were no reported clinical events.
**Conclusions:** Repeat radiation to the same site using 192-Ir for refractory ISR is safe and effective at 30 days. Complete 6-month clinical and angiographic follow-up will be available at presentation.

### 1196-24 Age is an Important Predictor of Clinical Outcomes Following Intracoronary Radiation Therapy for In-Stent Restenosis

Andrew E. Ajani, Edouard Cheneau, R. Larry White, Bill G. Bass, Augusto D. Pichard, Lowell F. Satler, Kenneth M. Kent, Melanie Oringer, Charles Duncan, Ellen Pinnow, Joseph Lindsay, Ron Waksman, *Washington Hospital Center, Washington, Dist. of Columbia.*

**Background:** Intracoronary radiation therapy (IRT) reduces the recurrence rate of in-stent restenosis (ISR) by inhibition of smooth muscle cell proliferation. The ability of these cells to replicate is limited with age due to changes in the telomeres. The purpose of this study was to assess the effect of age on clinical outcomes following IRT for ISR.
**Methods:** We evaluated 1275 patients (pts) with 6-month (mo) clinical follow-up who were enrolled in radiation trials for ISR using gamma and beta emitters conducted at the Washington Hospital Center. Patients with ISR who were assigned to IRT (N=1025) or placebo (N=250) were analyzed in 4 age groups: (<55 yrs, 55-64 yrs, 65-75 yrs, >75 yrs).
**Results:** Baseline clinical and angiographic characteristics were similar within each age group of IRT pts, except for a higher rate of diabetes in younger pts (42% in pts <75 yrs vs. 30% in pts >75 yrs, p=0.002) and a higher rate of previous CABG in older pts (58% in pts >75 yrs vs. 37% in pts <55 yrs, p< 0.001). The clinical outcomes at 6 mos for IRT treated pts are shown (Table). No effect of age was seen in placebo pts. IRT treated pts had reduced MACE compared to placebo in all age groups, driven by reduced target vessel revascularization (TVR). Multivariate analysis detected age as an independent predictor of MACE at 6 mths (odds ratio 0.8, CI. 0.70-0.93, p=0.004). **Conclusions:** Elderly pts (>75 yrs) potentially derive the maximum benefit from IRT for ISR as recurrent restenosis is significantly reduced compared to younger pts.

| | < 55 yrs (N=268) | 55-64 yrs (N=321) | 65-75 yrs (N=314) | >75 yrs (N=122) | P |
|---|---|---|---|---|---|
| Death, % | 1 | 3 | 4 | 4 | NS |
| Q-Wave-MI, % | 2 | 1 | 1 | 1 | NS |
| TLR, % | 19 | 21 | 13 | 8 | 0.002 |
| TVR, % | 28 | 26 | 19 | 16 | 0.005 |
| MACE, % | 28 | 28 | 20 | 18 | 0.02 |
| Late Thrombosis, % | 3 | 2 | 1 | 1 | NS |

POSTER SESSION

## 1197 Carotid Interventions II

Tuesday, March 19, 2002, 3:00 p.m.-5:00 p.m.
Georgia World Congress Center, Hall G
Presentation Hour: 3:00 p.m.-4:00 p.m.

### 1197-6 Neuroprotection Reduces the Risk of Peri-Procedural Major Strokes and Death in Octogenarians

Christina Brennan, Gary S. Roubin, Sriram S. Iyer, Sara Mgaieth, Pallavi Kumar, Nadim Al-Mubarak, Roxana Mehran, George Dangas, Martin B. Leon, Jiri J. Vitek, Gishel New, *Lenox Hill Heart and Vascular Institute, NY, New York, Cardiovascular Research Foundation, NY, New York.*

**Background:** Our previous work in carotid stenting (CS) suggested that patients ≥ 80 years of age compared with those < 80 are higher- risk for procedural related stroke. Since then, we have altered our strategy of performing CS in ≥ 80 years under neuroprotection (NP). The aim of this study was to compare procedural outcomes in patients ≥ 80 years with and without distal embolic protection.
**Methods:** Thirty- day outcomes (TIA, minor strokes, major strokes and myocardial infarction) were prospectively examined in those patients ≥ 80 years of age who had undergone CS with and without NP.
**Results:** There were no differences in age, % female, presence of risk factors, CAD, contralateral occlusion, and procedural success between the two groups. There were more patients in the NP group who were asymptomatic (64% vs. 44%), and with prior carotid endarterectomy (23% vs. 10%).

| 30 Day Outcomes | Without NP | With NP |
|---|---|---|
| Patient | 91 | 47 |
| Minor Stroke | 7 (7.7%) | 3 (6.4%) |
| Major Stroke | 6 (6.6%) | 0 |
| Fatal Stroke | 1 (1.1%) | 0 |
| Non- Stroke Death | 1 (1.1%) | 1 (2.1%) |
| **Total** | 15 (16%) | 4 (8.5%) |

*P= 0.06