**Regular Tachycardias in Patients with Paroxysmal Atrial Fibrillation.** Henry L. Weiner M.D., Elizabeth A. McCarthy R.N., and Edward L.C. Pritchett M.D., Duke University Medical Center, Durham, North Carolina.

Paroxysmal Atrial Fibrillation (PAF) is a grossly irregular tachycardia. The purpose of this study was to determine the incidence and clinical characteristics of other regular tachycardias (RT) that occured in patients with PAF. Forty-nine patients on a variety of antiarrhythmic medications including the Class Ic agents propafenone and flecainide were followed for a median of 371 days using transtelephonic monitoring to document symptomatic rhythms. Ninety-six episodes of RT in eighteen patients were analyzed. The incidence of RT was 25% at six months, 33% at one year, and 41% at eighteen months. 78% of RT episodes occurred with heart rates less than 160 bpm and were consistent with atrial flutter with block; however nine patients had a total of 16 episodes of RT with a rate above 180 bpm that likely were not due to atrial flutter with block. The incidence of these fast RTs was 14% at six months, 17% at one year, and 25% at eighteen months. QRS duration during RT was significantly longer in patients taking Class Ic drugs (median 105 vs 80 ms, p<.001 Wilcoxon Rank-Sum). For patients on Ic therapy the QRS duration of RT was related to the tachycardia heart rate (Spearmans rank, p<.01). All episodes of fast RTs with QRS duration >120ms occurred in patients taking Ic drugs. No patient died or had syncope.

Regular tachycardias are common in patients with PAF. Fast RTs not due to atrial flutter with block occur in 25% of patients with PAF within eighteen months of followup. In PAF patients receiving Ic agents these tachycardias have longer QRS durations and are difficult to distinguish from ventricular tachycardia regardless of the actual tachycardia mechanism. Clinicians treating patients with paroxysmal atrial fibrillation with Class Ic antiarrhythmics should expect a significant incidence of rapid, wide complex tachycardias during therapy.

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CURRENT LIMITATIONS OF INTRAVASCULAR ULTRASOUND FOR QUANTITATIVE ANALYSIS OF LUMINAL NARROWING

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The purpose of the present investigation was to determine the extent to which intravascular ultrasound (IVUS) exam can be used to quantify: a) absolute (ABS) luminal cross-sectional area (XSA); and b) relative (REL) XSA narrowing by atherosclerotic plaque (AP), i.e. residual luminal area as a % of native non-obstructed lumen. A total of 42 sites, including mildly narrowed (n=26) as well as severely narrowed (n=16) sites were examined in 15 pts pre- and/or post-intervention (I) using a representative 20 MHz, 6.6 Fr. IVUS probe. Sites were judged to be mildly narrowed when the IVUS probe occupied <50% of lumen XSA sites were judged to be severely narrowed if the IVUS probe occupied >90% of the lumen XSA. At all sites, mildly, severely narrowed, pre- or post-I, determination of ABS XSA was consistently possible. In contrast, determination of REL XSA narrowing was not possible in 12/16 (75%) severely narrowed as well as 14/26 (54%) mildly narrowed sites. More definitive determination of REL XSA was infrequently achieved due to inability to consistently distinguish individual layers of arterial wall. Not only was distinction between AP and media not consistently achieved, but identification of media/adventitial boundary was equally difficult. Conclusion: although quantification of luminal XSA is usually feasible, accurate in vivo assessment of the intimal/medial and medial/adventitial borders is more often not possible with currently available IVUS instrumentation.; this limitation has important implications for many of proposed applications of IVUS.

SAFETY AND EFFICACY OF THROMBOLYTIC THERAPY FOR SUPERIOR VENA CAVA SYNDROME

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Due to the limited number of patients (pts) studied, the safety and efficacy of thrombolytic therapy (TT) for superior vena cava (SVC) syndrome is unknown. This report reviews the use of urokinase (UK) (n=7) and streptokinase (SK) (n=5) in the treatment of venographically proven SVC syndrome. Underlying conditions were cancer (n=7), long-term total parenteral nutrition (n=3), and long-term intravenous antibiotics (n=2). A systemic fibrinolytic state was achieved using either UK (mean time of infusion 41 hrs, 4,000 u/kg/hr) or SK (mean time of infusion 41 hrs, 100,000 u/hr) infused directly into a Hickman catheter (n=8) or into a peripheral vein (n=4). The results are demonstrated below.

| | Hickman Catheter | | No Hickman Catheter | | Duration of Thrombosis | |
|---|---|---|---|---|---|---|
| | UK n(%) | SK n(%) | UK n(%) | SK n(%) | ≤5 days n(%) | >5 days n(%) |
| Successful Lysis | 4(80) | 1(33) | 1(50) | 0 | 5(83) | 1(17) |
| No Lysis | 1(20) | 2(67) | 1(50) | 2(100) | 1(17) | 5(83) |

In the 10 pts who were followed, 6 pts died in a mean time of 7.3 months whereas 4 pts were alive at 23 months. There were no major complications and 2 pts (17%) had small catheter site hematomas. TT was effective and safe in relieving SVC syndrome in 80% of pts receiving UK and 33% of pts receiving SK. Symptoms were relieved and the catheter was preserved in pts in whom TT was effective. Factors predicting success were: (1) UK compared to SK, (2) presence of Hickman catheter with SVC syndrome and (3) duration of thrombosis ≤5 days.

LIPOPROTEIN ABNORMALITIES IN PATIENTS WITH LOWER EXTREMITY ARTERIOSCLEROSIS OBLITERANS

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Although patients (pts) with lower extremity arteriosclerosis obliterans (ASO) as a group have high total cholesterol (TC) levels, the prevalence of various lipid/lipoprotein (L/LP) abnormalities have not been fully described. In this study, L/LP abnormalities were characterized in 125 consecutive pts (mean age 64 ± 9 years) with ASO. L/LP abnormalities were present in 109 pts (87%). Mean ± standard deviation L/LP values (mg/dl) were: TC-238 ± 60, triglycerides (TG)-241 ± 224, LDL-C-153 ± 45 and HDL-C-38 ± 13. HDL-C was lower in men compared to women (36 ± 12 vs. 42 ± 15, P=0.01) and in pts with concomitant coronary heart disease (CHD) compared to those without CHD (34 ± 10 vs. 43 ± 15, P=0.001). However, 35 pts (28%) had "desirable" lipid levels with TC <200 mg/dl and 40 pts (32%) had LDL-C <130 mg/dl. An HDL-C <35 mg/dl occurred in 60 pts (48%) with or without other L/LP abnormalities. Body weight (80 ± 22 kg vs. 71 ± 11 kg, P=0.01) and TG (336 ± 286 vs. 154 ± 75, P=0.0001) were higher in the low HDL-C group compared to the normal HDL-C group. Multivariate analysis demonstrated an independent inverse relationship between weight (-0.3, P=0.004), TG (-0.01, P=0.005) and diabetes mellitus (DM) (-4.7, P=0.02) and the level of HDL-C. The only difference in L/LP values in pts with DM (n=49) compared to pts without DM (n=76) was a lower HDL-C (33 ± 10 vs. 40 ± 15, P=0.01). Since 28% of pts with ASO had a TC <200 mg/dl and 48% had a low HDL-C, a complete lipid profile should be performed in patients with ASO. Mean TC and/or TG are usually but not invariably increased. Only 13% of pts had a normal lipid profile.