Conclusions: Prolongation of the QT interval by A is only beneficial if QTpeak and TpTe are increased proportionally. Risk of cardiac death is increased if the QT prolongation is mainly due to an increase in TpTe.

1115-11 Markers of Central Modification of the Sympathetic Nervous System Activity in Humans
Vladimir Shusterman Peter J. Jannetta, Benhur Aysin, Maksim Glukhovskoy, Irmute Usiene. University of Pittsburgh, Pittsburgh, PA, Allegheny General Hospital, Pittsburgh, PA

Brainstem centers of the sympathetic nervous system activity (SNSA) located in the rostral ventro-lateral medulla (RVLM) play an important role in SNSA homeostasis. We hypothesized that mechanical stimulation of the RVLM in anesthetized rats would modify SNSA and examined the effects of the stimulation on heart rate (HR) and HRV.

Methods: In 10 patients (age: 54±14y, 5 females), the left (7 patients) or the right (3 patients) side of the brainstem was exposed during neurosurgery, and a mechanical stimulation (duration: 1 min, frequency: 1-2Hz) of the RVLM area was performed consecutively at 3-7 sites using a 2-mm metallic ball. RR-intervals between the sinus beats were extracted from the continuous ECG recordings, and the low (LFP: 0.04-0.15Hz) and high (HFP: 0.15-0.4Hz) frequency powers of HRV, and the ratio LFP/HFP were calculated in consecutive 5-min intervals.

Results. HR increased during the stimulation of RVLM both on the left and the right side from 81±4 to 86±3 bpm (p<0.01) (Figure). LFP and HFP tended to decrease slightly (15% and 10%, p<0.03 and 0.08, respectively), but LFP/HFP did not change (p=0.7).

Conclusions: Central sympathetic stimulation in anesthetized patients with controlled respiration increases HR, but does not change the spectral distribution of HRV as reflected by the ratio LFP/HFP. This suggests that HR is a more reliable marker of central SNSA modifications in this setting than spectral HRV indices.

821 Electrocardiographic Insights Into Cardiac Physiology
Monday, March 31, 2003, 2:00 p.m.-3:30 p.m.
McCormick Place, Room S404

821-1 Autonomic Modulation of the U Wave
Alick R. Maginnis, Sarath Suleman, Cameron M. Bloomfield, Columbia University New York Presbyterian Medical Center, New York, NY

Background: Increasing evidence supports the hypothesis that U waves visible on the electrocardiogram (ECG) of normal individuals may be caused by afterdepolarizations (AD). Catecholamines are known to increase the amplitude of both ADs and U waves. Beta-adrenergic blockade decreases AD amplitude while alpha-adrenergic stimulation in intact animals increases AD amplitude, but their effects on the U wave are unknown.

Methods: 25 normals underwent esmolol (1mg/kg, then 0.05 mglkg/min) and phenylephrine infusion (1.4±0.2mg/kg/min). Heart rate (HR), T & U wave amplitude, and QT & QU intervals were measured using QT-corrected baseline and during drug infusions. Among 24 subjects with U waves on their resting ECG, baseline values were compared with those during drug infusion by paired t-tests.

Results: As expected, HR decreased with both interventions (p<0.001). Mean U wave amplitude increased by 16.3% during phenylephrine (from 83.0±11.4 to 96.5±11.4, p<0.001), but decreased from 632±110 to 568±110 with esmolol (p<0.001). QT & QU intervals increased with both interventions (p<0.001). QT & U wave intervals increased with phenylephrine (p<0.001), but decreased from 90±10 to 85±10 with esmolol (p<0.001). Gender differences in cardiac repolarization of the Human Transplanted Heart
Shubhashri A. Gowda, Steven A. Rothman, Temple University, Philadelphia, PA

DAOGROUND: Hormonal and autonomic influences have been proposed to be responsible for the differences in cardiac repolarisation between man (M) and women (F) as manifested by the longer ECG QTc interval in F. To evaluate the effects of hormones, we reviewed the changes in cardiac repolarisation from pre- to post cardiac transplantation (OHT) of the donor heart in transgender and same gender recipients. METHODS: ECGs were analysed in 100 OHT patients: 42 transgender (26 F to M and 16 M to F) and 58 same gender (8 F to F and 50 M to M). The donor QTc was measured prior to explantation and then again following OHT at regular intervals comparing the change in QTc.