NURSE & TECH

NURSE & TECH ABSTRACTS

CRT-500

Invasive Catheterization Case Length Analysis: Results from Duke University Medical Center

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BACKGROUND Invasive cardiac catheterization laboratories perform a variety of cardiac diagnostic and interventional procedures each year. With nationwide efforts to improve efficiency, room utilization and patient scheduling, little data is available regarding median procedure times.

METHODS For the years 2012-2014, all invasive cardiac procedures (excluding electrophysiology procedures, acute ST elevation myocardial infarction procedures, valvular interventions and peripheral interventions) at Duke University Medical Center were grouped into case type and analyzed based on mean case length and provider.

RESULTS During the 3-year period, a total of 10,355 cases were analyzed. Fifteen staff cardiologists performed invasive procedures in the Duke Adult Cardiac Catheterization Laboratory during the study period. Case length was defined as "wheels in to wheels out" or the amount of time the patient was in the catheterization laboratory. The case counts, case type, % of overall cases, and mean case length were recorded and results are reported in the Table. Based on mean case length, a recommendation for scheduling (time slot in minutes) is provided.

CONCLUSION Measurement and reporting of mean case length can be used to help determine workload and improve efficiency in cardiac catheterization laboratories. Use of mean case length to more effectively schedule patients may lead to reductions in waiting times. Future investigation should include targeted scheduling and interventions to improve catheterization laboratory efficiency and patient satisfaction.

Table

Procedure Type	Case Count	% of Overall Cases	Mean Case Length (min)	Recommended Scheduling Time Slot (min)
Left Heart Cath (including Coronary Angiography)	3,195	30.9%	93	90
Right Heart Cath + Left Heart Cath (including Coronary Angiography)	2,732	26.3%	89	90
Right Heart Cath Only	2,369	22.9%	59	60
Coronary Angiography + PCI	2,059	19.9%	112	120
Total	10,355	100%		

SCIENCE

ATHEROSCLEROSIS

CRT-600

Detection of Neoatherosclerosis in Optical Coherence Tomography - A Pathology Study

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BACKGROUND Neoatherosclerosis has been recognized as important disease entity found in nascent neointimal tissue in the aftermath of stent implantation. This study aimed to establish a novel animal model of neoatherosclerosis and to investigate the feasibility in detecting neoatherosclerosis using optical coherence tomography (OCT).

METHODS Stented arteries in an atherosclerotic rabbit model (n=15) as well as 6 autopsy cases with neoatherosclerosis were evaluated. The animal model employed 3 different study groups which differed in the duration of cholesterol diet and in the sequence of vascular interventions. OCT frames and histological cross sections were co-registered and neoatherosclerotic changes were assessed by peak intensity and attenuation index of OCT light emission.

RESULTS The presence of neoatherosclerosis was significantly increased in rabbits with long-term high dose - cholesterol diet and repeat denudation of the endothelial layer.

The cut-off in peak intensity for detecting neoatherosclerosis in human autopsy cases was 117.98 (Specificity: 59.80%; Sensitivity: 75%) and 95.99 in rabbits (Specificity: 62.11%; Sensitivity: 72.90%). The attenuation index was -0.7345 (Specificity: 84.31%; Sensitivity: 77.38%) in humans and 0.2414 in rabbits (Specificity: 89.83%; Sensitivity: 45.16%).

CONCLUSION Neoatherosclerotic lesions can be established in a preclinical rabbit model following hypercholesterolemic feeding and repeat arterial denudation. The detection of neoatherosclerosis is feasible using OCT imaging. However, limitations remain in the differentiation of advanced stages of neoatherosclerosis.
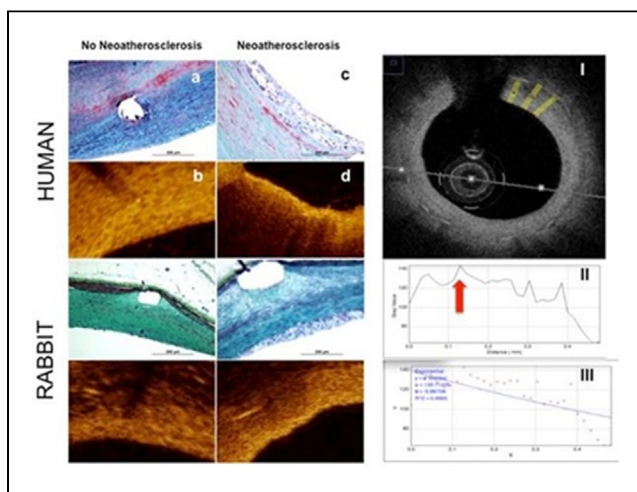
LIPID MANAGEMENT

CRT-601

The VA Beach Diet Study: An Investigation Of The Effects Of Plant-based, Mediterranean, Paleolithic, And Dash Diets On Cardiovascular Disease Risk

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BACKGROUND Cardiovascular disease (CVD) is the leading cause of death in the United States for middle-aged men and women despite the fact that prevention and control of CVD is achievable by modifying risk factors through lifestyle changes and diet therapy. We examined the impact of four diet programs (plant-based (Vegan), Mediterranean, Paleolithic (Paleo) and DASH diets) on the CV risk factor profile of adults in the Hampton Roads area of Virginia.

METHODS Nondiabetic adults (ages 35-85) with one or more risk factors for CVD were invited to participate in 1 of the 4 diet arms. Participants underwent a comprehensive nutrition education program prior to a 60-day diet intervention in which they kept a daily food log and met weekly with a multi-disciplinary study team. An initial health screen was performed to assess weight, blood pressure (BP), fasting glucose (FPG), A1C, lipids and lipoprotein particles, and repeated after 60 days on the diet and at 6-months follow-up.

RESULTS 279 subjects completed the 60-day dietary intervention (58 Vegan, 80 Mediterranean, 76 Paleo, 65 DASH), and 199 returned for 6-month follow-up. Most subjects were female, Caucasian, mean age 56, mean BMI 33 kg/m2. At baseline, mean FPG, TG and HDL-C were within the normal range, whereas LDL-P and BP were elevated. After 60 days on the respective diets, subjects lost an average of 9 lbs (4.7% body weight, total 2,576 lbs), which was associated with improvements in BP across all groups. Subjects on the Vegan and Paleo diets lost the most weight (~6.5%) and showed the greatest improvement in lipid risk factors (11-14% decrease in LDL-P; 10-20% decrease in VLDL and TG).

CONCLUSION All four diets promoted weight loss and improved BP but had variable effects on lipid risk factors. Effects were greatest and sustained in those subjects that attended regular diet support group meetings.