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Abstract 400.14: Application of Hierarchical Cluster Analysis to Study the Relationships Among CHADS2, CHA2DS2-Vasc, and Five Cardiac Risk Factors Scores (RFS) in Predicting Risk of Stroke

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vascular wall in both groups. Immediately after harvesting, we found the mRNA signal. After 15 min to 1 hour, the expression was downregulated.

CONCLUSION Based on our analyses, we can conclude that in case of conventional technique, less damage of SV was observed than in the case of endoscopic harvesting. All other parameters showed the same results in both groups.

400.13

Premedication with Steroids and Short-Term and Long-Term Renal Outcomes After Coronary and Peripheral Angiography and Intervention



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BACKGROUND Limited data exist regarding the outcomes after coronary and peripheral angiography and intervention in patients with a history of contrast dye allergy who are premedicated with steroids.

METHODS We studied 4367 patients undergoing peripheral or coronary angiography and percutaneous coronary or endovascular intervention at a Veterans' Affairs Medical Center. We assessed short-term and long-term outcomes: contrast-induced nephropathy, renal dysfunction/contrast-induced nephropathy at 3 months, chronic kidney failure necessitating dialysis, and mortality in patients pretreated and not pretreated with steroids.

RESULTS The study population was predominantly male (98%) and white (65%) with a mean age of 66 years. Of the total patient population, 260 (5.9%) of the total subjects had either a contrast or a seafood/shellfish allergy and were pretreated with steroids. Of the 4367 subjects, 1962 (45%) had repeat creatinine values at 3 days, and 3100 (70%) had repeat creatinine values at 3 months. Overall 3 (2.5%) patients in the allergy group and 85 (4%) patients in the non-allergy group developed contrast-induced nephropathy at 3 days (P=0.39). The proportion of patients with nephropathy at 3 months and of patients who were started on dialysis after 5 years was not significantly different between the 2 groups. After 5 years, 40 (15.4%) patients in the allergy group and 812 (19.8%) patients in the non-allergy group had died (P=0.09). After adjustment for baseline comorbidities, there was a significant inverse association between dye allergy/steroid premedication and death at 5 years (odds ratio 0.72; 95% confidence interval 0.53-1; P=0.049).

CONCLUSIONS In this cohort of US veterans, pretreatment with steroids was not associated with the development of renal dysfunction or the initiation of dialysis. The association between dye allergy, steroids pretreatment, and mortality needs to be validated in larger cohorts.

400.14

Application of Hierarchical Cluster Analysis to Study the Relationships Among CHADS₂, CHA₂DS₂-Vasc, and Five Cardiac Risk Factors Scores (RFS) in Predicting Risk of Stroke



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OBJECTIVE Various risk calculators for stroke may not be practical in planning prevention as these mostly include non-modifiable factors. We compared 2 popular risk scores for stroke and 5 risk factors scores (RFS) meant for cardiovascular disease (CVD) with modifiable factors. We believe that identifying and managing modifiable factors from other scores may help in better stroke prevention planning.

METHODS We utilized data gathered from patients admitted to University Hospital in Sarajevo between 2014 and 2016. Five RFS, namely, 10-year Framingham CHD, QRISK 2, AHA/ACC ASCVD risk, Framingham ATP III, and EU SCORE, along with CHADS₂ and CHA₂DS₂-VASC scores were calculated. We entered 5 RFS as dimensions in a hierarchical cluster analysis to group people based on their risk of developing CVD and compared cluster membership cutoffs for CHADS₂ and CHA₂DS₂-VASC scores.

RESULTS There were 1277 patients in this study, and a majority (65%) were women. The mean (SD) age of the sample was 56.2 (11.4) years. Values for each score within each cluster are presented in **Table 1**. Obtained clusters were homogenous and were able to classify patients into 4 clusters, ordered from lowest to highest risk. Cluster 1 contained patients with lowest mean scores, and cluster 4 with highest mean scores. Stroke and CVD risk scores pointed in the same direction and could be used in complimentary way.

CONCLUSION This novel method produced good estimates of a patient's risk of developing stroke by combining several scores. Since CHADS₂ and CHA₂DS₂-VASC scores are mostly comprised of non-modifiable risk factors, other CVD risk scores may provide more insights into stroke risk management. Correctly identifying patients who truly have a low risk of developing stroke may help a practitioner's decision about administration of anticoagulants; these could be safely withheld among those who are at greater risk of harm than benefit.

Table 1. Cluster centers representing average risk score values

Cluster	N	CHADS ₂	CHA ₂ DS ₂ -Vasc	QRISK 2	FRCHD10	ACC/AHA	ATP III	EUSCORE
1	575	0.62	1.41	0.06	0.06	0.05	0.05	0.03
2	199	1.00	1.75	0.10	0.10	0.08	0.07	0.08
3	410	1.00	2.19	0.18	0.15	0.15	0.11	0.11
4	93	1.90	2.81	0.28	0.24	0.23	0.11	0.10



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