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## OCULAR PSEUDOEXFOLIATION SYNDROME AND ITS ASSOCIATION WITH CARDIOVASCULAR DISEASE AND HOMOCYSTINURIA: A META-ANALYSIS

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**INTRODUCTION:** Pseudoexfoliation syndrome (PEX) is a common cause of open angle glaucoma and is associated with multiple ocular pathologies including the acceleration of cataracts. PEX is characterized by stress-induced elastic microfibrilopathy related to an accumulation of matrix metalloproteinases. The accumulation of matrix metalloproteinases increases deposition of protein substance within ocular structures and other organs including the heart. Many studies have associated the presence of cardiovascular disease with pseudoexfoliation syndrome, but none have specified which particular disorders occur. The following meta-analysis aims to relate PEX with certain cardiovascular events and disorders.

**METHODS:** A thorough literature review was performed to acquire the study data and outcome information for patients with certain cardiovascular disorders. Diseases and disorders considered included myocardial infarction, ischemic heart disease, chronic ischemic heart disease, angina, congestive heart failure, cardiomyopathy, aortic aneurysm, hypertension, and homocystinuria. Patient data sets were then

evaluated separating out those study subjects with and without pseudoexfoliation glaucoma or pseudoexfoliation syndrome. Those patients without evidence of pseudoexfoliation disease became the controls of our study. Multiple forest plots (formerly blobbograms) were created to compile and analyze collected data for statistical comparison.

**RESULTS:** From a literature review involving 234 separate studies, 18 were selected for our study. Cardiovascular disorders that had a statistically significant association (within a 95% confidence interval) with pseudoexfoliation syndrome and pseudoexfoliation glaucoma included ischemic heart disease, aortic aneurysms, and homocystinuria.

**CONCLUSION(S):** Ischemic heart disease and aortic aneurysms are highly associated with the PEX syndromes. Homocystinuria is also highly associated with PEX syndrome, which may further explain the presence of certain cardiovascular diseases within this patient population.

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## SURVEY OF ARIZONA EMERGENCY DEPARTMENT INFECTIOUS DISEASE PREPAREDNESS FOR POSSIBLE EBOLA PATIENTS

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**INTRODUCTION:** The Ebola epidemic in West Africa has reached 28,421 cases, with several cases presenting within the United States<sup>1</sup>. The Emergency Department (ED) often serves as the first line of treatment within the healthcare system. Arizona is the sixth largest state by area and the fifteenth largest by population in the United States. The majority of this population is located within just a few large metropolitan areas and the remaining consists of small rural communities that rely on small EDs that lack the resources and personnel of many larger centers. We sought to assess how EDs throughout the state would be able to treat and quarantine an Ebola patient.

**OBJECTIVE:** We sought to assess the preparedness of Emergency Departments in Arizona for a possible Ebola patient presenting via triage.

**METHODS:** Between October and December of 2014, we contacted all healthcare centers in Arizona with an ED as listed by the Arizona Hospital and Healthcare Association, in order to survey their preparedness, training, and protocols for a possible Ebola patient. Surveys were conducted through email and by phone, and each center was contacted a minimum of three times to maximize response rates.

**RESULTS:** We received completed surveys from ten EDs in Arizona (response rate: 24%). Most were small centers, with 80% of responses from Level III or lower trauma centers and 60% (6/10) with annual ED volumes of <40,000. 50% (5/10) of the hospitals were in rural locations.

60% (6/10) of the EDs had ≤ 1 isolation beds and 70% (7/10) had ≤ 1 negative pressure rooms. 30% (3/10) of EDs had no decontamination procedures in place and 60% (6/10) stated they would use regular

cleaning staff in ED rooms. 30% (3/10) had no procedure for contaminated waste disposal.

90% (9/10) of hospitals had created Ebola protocols within October and November of 2014. Of these, 56% (5/9) had no clear procedures for exposure of other patients, and only 40% (4/10) had a protocol for exposed healthcare staff. All EDs reported Ebola training within several months of the survey.

Overall, merely 10% (1/10) felt very prepared to manage a potential Ebola patient. 60% (6/10) felt somewhat prepared, 20% (2/10) felt they needed more time or resources to fully prepare, and 10% (1/10) felt unsure whether their ED was prepared for an Ebola patient.

The majority of ED responders were small centers, many rural. Most created Ebola policies in October and November of last year and these were not comprehensive. Many hospitals requested clarification of national protocols and standardization of education on along with access to Personal Protective Equipment (PPE) for the management of these patients.

**CONCLUSION:** EDs have begun training in Ebola protocols, but these do not appear to be comprehensive and multiple simultaneous patients would easily exceed their surge capacity. This is compounded by a lack of the nationally regulated information, resources, and equipment needed for ED preparation.

### REFERENCES:

<sup>1</sup>"2014 Ebola Outbreak in West Africa – Case Counts." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention. Web. 04 Oct. 2015.