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A Retrospective Study Comparing Clinical Profiles and Initial Treatments Received of Elderly and Non-Elderly Patients with Acute Coronary Syndrome at the Intensive Care Units

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Commentary

According to the Declaration of the American Heart Association (AHA) Acute Coronary Care in the elderly, ischemic heart disease is the leading cause of death among patients in the United States, Europe and the World. It was also indicated in this statement that 35 percent of all deaths among persons aged 65 years and older were caused by ischemic heart Disease [1].

Across the trials on Acute Coronary Syndrome (ACS), it has been proven that age is a powerful determinant of morbidity and even mortality [2]. This morbidity and mortality has been attributed to several factors such as change in physiology in an elderly patient which led to inability of the body to handle disease related complications, presence of other comorbidities, and the susceptibility to treatment related complications such as antiplatelet therapy and percutaneous coronary intervention.

Due to the aforementioned harm of such treatments, the elderly group is under represented in many clinical trials [3]. This brings confusion and dilemma to many physicians whether to perform an aggressive procedure such as PCI or do only conservative measures to prevent more harm to the elderly patient.

Both international and local data on elderly patients suffering from Acute Coronary syndrome is limited. By knowing their demographics, as compared to the non-elderly patients, we will be able to know which of this set of population is particularly susceptible to Acute Coronary Syndrome and to other adverse events. Another aim of this study is to know and compare the current practices of physicians in treating an elderly and a non-elderly patient with Acute Coronary Syndrome.

The approach to Acute Coronary Syndrome has evolved throughout the years in the face of the aging population. Particularly in the Philippines, the Philippine Heart Association (PHA) has come up with an Acute Coronary Syndrome (ACS) Registry; which is a multicenter registry of clinical management practices of ACS patients and patient outcomes. It is designed to collect, analyze and disseminate data on ACS patients. This registry included mostly patients 51-70 years old and this registry can be very useful in assessing and analyzing the possible approach of ACS patients including the elderly group.

Like the PHA registry, this study has reviewed the clinical profiles of ACS patients but now focusing on comparing the non-elderly and elderly patients. This study has shown based on the clinical profiles reviewed, that non-elderly patients with ACS mostly are males and elderly patients with ACS are mostly females. This study has shown that due to aging, females are more predisposed to ACS which may be due to hormonal issues such as menopause leading to increased

cholesterol metabolism and increased propensity for hypertension leading increased risk factor for ACS. It is generally recognized that women have a two-fold higher mortality as well after myocardial infarction compared to men [4]. A report of the Third International Study of Infarct Survival (ISIS-3) Collaborative Group in 1998 showed 9,600 women and 26, 480 men with myocardial infarction showed that mortality rate was significantly higher in females but when compared within the three groups of the population (less than 60, 60 to 69, and more than 70 years old), the mortality rate differences were reduced with decreasing age [5].

Other comorbidities were also assessed in this study and the most prominent were hypertension, diabetes mellitus, dyslipidemia, previous myocardial infarction and stroke but when compared statistically, there were no significant differences found. Due to phenomenon of biologic aging, the elderly it is universal for the elderly group to have a higher incidence for such comorbidities. Although this study focused on the elderly group, it was also observed in this study that risk factors for Acute Coronary syndrome in the non-elderly group are increasing. A study by Esteban et al. described the increasing incidence of ACS in the young (particularly aged 40 and below) and the main risk factor noted was smoking leading to vasospasm of the coronary arteries. Another major risk factor noted in this study was unhealthy lifestyle and sedentary behavior leading to increase incidence of obesity and dyslipidemia [6]. This finding implies that although age is a strong risk factor for significant comorbidities and ACS, lifestyle and diet modification is imperative as part of health education to patients whether in the non-elderly or elderly age group.

The rate of use of invasive procedures such as diagnostic coronary angiography and stenting were significantly lower in the elderly age group in this study. The elderly group is known to have a high risk for complications for the procedure, and the real-world registries continue to demonstrate less use of cardiac medications and invasive procedures, even among those who are likely to derive benefit [7]. However, a study published at the Open Heart Journal by De Luca which analyzed that clinical characteristics and management of elderly patients with NSTEMI showed that the use of coronary angiography and myocardial revascularization and adjunctive evidence based therapies in this high risk population has increased dramatically and that these advances in the care seem to be associated with reduction in the rate of mortality [8]. The TRIANA study compared the efficacy and safety of PCI and fibrinolysis in very old STEMI patients and showed a trend towards a reduction in the primary end point of 30-day death, recurrence of myocardial infarction or stroke with Primary PCI [9]. These findings can be a useful guide for interventional cardiologist regarding management of elderly patients with ACSs. Weighing the benefit and the risks as based from the clinical judgment should be

done in order to prevent further morbidity and possible mortality in this high-risk group.

In terms of prognosis and in-hospital outcomes, this study has shown that the elderly group has significant in-hospital morbidity from myocardial infarction. This included acute respiratory failure, acute kidney injury, and bleeding.

Bleeding complication may be modifiable and non-modifiable and age in directly correlated with increased risk of bleeding [10]. Manoukian et al. indicated that compared to patients less than 50 years old, those 70-80 years old and more than 80 years old were at 1.6 fold and 1.9 fold increased risk for major bleeding respectively. This has led to limitations of physicians to give the full doses of antiplatelet and anticoagulants to elderly patients.

Acute respiratory failure (ARF) is a common complaint of elderly patients in emergency department, and the key clinical presentation of cardiac and respiratory disorders [11]. This study showed that the elderly group has an increased propensity for acute respiratory failure when they suffer Acute Coronary Syndrome. Findings of Acute Respiratory Failure in this study presented as sudden onset pulmonary congestion and decreased in level of consciousness. Onset of acute respiratory failure in an elderly with ACS portends to a poor prognosis. Acute coronary syndrome, particularly Congestive heart failure in an elderly has in-hospital mortality, ranging from 13 to 29%, with a rate of early re-hospitalization from 29 to 47% within 3–6 months of the initial discharge, and a 1 year survival of 50% [12].

A report by Toso et al. showed that baseline values independently associated with Acute Kidney injury in the elderly were creatinine clearance and ejection fraction. This study also showed AKI, where needing renal replacement therapy or not, was an independent predictor of all-cause 1 year mortality [13].

Hence, the study concluded that the elderly group of patients with Acute Coronary Syndrome regardless of type has a higher risk of in-hospital morbidity. Although not significant in this study, mortality rates could possibly be affected as well due to a high rate of morbidity. Besides this information and as well as proven by other studies and registries, they tend to be undertreated invasively and be given less invasive pharmacologic treatments which may be due to the fact that elderly patients tend to be frail and have confounding comorbidities.

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