

## CHAPTER I

### INTRODUCTION

#### 1.1 Background

Delirium is an acute, transient and reversible neuropsychiatric syndrome which is often encountered in geriatric patient and counted as a complication following a surgery (Reddy, Irkal and Srinivasamurthy, 2017; Grover and Avasthi, 2018; Maldonado, 2018). According to past studies the rate for post-operative delirium (POD) is 15%-53% and it varies depend on the age of the patient or the type of surgery (Reddy, Irkal and Srinivasamurthy, 2017; Whitlock, Vannucci and Avidan, 2011).

POD could lead to lengthen time to discharge, greater medical bills, delay in recovery, and bedsores and fractures by a fall (Reddy, Irkal and Srinivasamurthy, 2017); Wang *et al.*, 2016). These conditions are especially a burden to geriatric patients. POD could also lead to a chronic disorder, where the cognitive deficits became persistent. Dementia has the worst outcome of POD, with higher rates of institutionalization, hospitalization and deaths (Reddy, Irkal and Srinivasamurthy, 2017).

The rate of POD is especially high in older patients. Geriatric patients have a very unique physiology condition that differs them from other patients. With rising life expectancy, the number of elderlies with degenerative disease which limits physical activity also increased (Irianto S, Oen and Sukmajaya, 2018; Abbott *et al.*, 2016; Raats *et al.*, 2015). This would bring the need for surgery, causing a huge stress for the patients (Schenning and Deiner, 2015). Furthermore, geriatrics suffer from many comorbidities. This could affect the outcome of a surgery that leads to POD.

Even though prevention methods for POD are already established, multifactorial etiologies complicate many cases, leading to miss diagnoses. POD most often occurs in orthopedic surgeries such as hip replacement along with total knee replacement (Whitlock, Vannucci and Avidan, 2011). The risk of acquiring POD became 100% in patients with dementia undergoing orthopedic surgery (Maldonado, 2018). Other risk factors such as age over 65, male, history of stroke, or renal dysfunction could also lead to POD (Reddy, Ikkal and Srinivasamurthy, 2017). The multifactorial etiologies of delirium will be assessed as risk factors and included as a contribution to POD.

The aim of this study is to have a better understanding in the risk factors that could precipitate delirium in geriatrics undergoing major orthopedic surgeries.

We will conduct our research at Orthopedic and Traumatology Hospital, where there are lots of geriatric patients who had undergone major orthopedic surgery.

## **1.2 Research Problem**

1. Is there any association between pre-intra-post-operative risk factors for delirium in geriatrics undergoing major orthopedic surgeries?

## **1.3 Objective**

### **1.3.1 General Objective**

1. To understand the association of risk factors for delirium in geriatrics undergoing major orthopedic surgeries.

### **1.3.2 Specific Objective**

1. To describe the general characteristics of patient that has a potential for developing POD.
2. To determine the incidence of POD in geriatrics undergoing major orthopaedic surgeries

3. To determine the risk factor's characteristics for delirium in geriatrics undergoing major orthopedic surgeries.
4. To analyse the association between risk factors and the risk of acquiring POD in geriatrics undergoing major orthopedic surgeries.

#### **1.4 Benefit**

1. To have a better understanding about risk factors concerning delirium.
2. To evaluate and recommend a better prevention method for postoperative delirium.