One of the most prevalent arrhythmia after coronary artery bypass graft (CABG) surgery is atrial fibrillation (AF) which is the most common arrhythmia after coronary artery bypass graft (CABG) surgery [1]. It has been reported that the rate of AF occurrence following CABG surgery ranges from 3% to 50% in different reports. Although AF is a benign condition and does not increase the risk of mortality within 30 days after CABG and it is generally considered as a benign condition. However, concerns remain regarding due to its complications, including hemodynamic disturbances, palpitation, thromboembolism, and post surgical stroke remains [2-3]. Complications can lead to longer in turn increase the length of postoperative stay period that will ultimately increase hospital costs [4-5]. Therefore As such many attempts have been made to reduce the incidence of postoperative AF (POAF) occurrence [6]. There is no clear etiology attributed to POAF prevalence after cardiac surgery which is not completely elucidated [1]. However, some risk factors such as a history of AF, advanced age, concurrent coronary and valve surgery, history of congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), as well as duration of cross clamp are believed to increase the risk [7-9].

Among POAF risk factors hypomagnesaemia is one of the well-documented POAF risk factors. Since more than three decades ago, evidence has shown that from more than three decades ago, it was demonstrated that the total serum magnesium concentration is decreased during cardiac surgery with cardiopulmonary bypass (CPB) the total serum magnesium concentration decreases [10-12]. And besides, there is a reduction in total serum level of magnesium in more than 80% of patients undergoing CABG sustain a reduction in total serum level of magnesium. Thus, administering magnesium administration into patients who have undergone cardiac surgery can lead to not only may reduce
reducing POAF incidence, but also and produce producing a better myocardial outcome [4, 13].

Generally, Magnesium magnesium is commonly administered intravenously during perioperative period for prevention of POAF, with controversy [13-16]. It has been shown that routine intravenous administration of magnesium has been shown to have no significant effect on serum magnesium concentration and as well as incidence occurrence of perioperative arrhythmia after CABG surgery [17]. On the other hand In contrast, using magnesium-free cardioplegia may might result in postoperative low serum magnesium concentration which, and this has been found to be as a risk factor for the subsequent development of new postoperative AF [18]. Therefore, addition of adding magnesium to the cardioplegic solution may could be beneficial helpful in such cases [18-20].