UNIVERSITI TEKNOLOGI MARA

TIMING OF ACUTE CORONARY SYDROME ONSET WITH OBSTRUCTIVE SLEEP APNOEA RISK STUDY (TACOS)

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Thesis submitted in fulfillment
of the requirements for the degree of
Master of Internal Medicine

Faculty of Medicine

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CONFIRMATION BY PANEL OF EXAMINERS

I certify that a Panel of Examiners has met on 14th May 2018 to conduct the final examination of Muhammad Hanis Bin Muhmad Hamidi in his **Master of Internal Medicine** thesis entitled "Timing of Acute Coronary Syndrome Onset with Obstructive Sleep Apnoea Risk Study" in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The Panel of Examiner recommends that the student be awarded the relevant degree. The Panel of Examiners was as follows:

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AUTHOR'S DECLARATION

I declare that the work in this disertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

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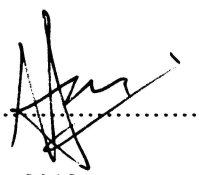
Signature of Student	:	
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ABSTRACT

Introduction: Acute coronary syndrome (ACS) remains the principal cause of death in Malaysia. It is estimated about 20-23% of ACS occurs at night-time between 12am to 6am (nocturnal ACS). Factors associated with nocturnal ACS are unknown. Acute nocturnal pathophysiological response to obstructive sleep apnoea (OSA) may increase risk of nocturnal ACS. This study aims to determine the prevalence of nocturnal ACS and establish any risk factors in particular OSA risk which may be associated with nocturnal ACS. **Methodology:** This was a cross-sectional study of ACS patients undergoing coronary angiogram in CTC UiTM Sg Buloh between 1st August 2017 and 28th February 2018. Combination of STOP-BANG and Epworth Sleepiness Scale (ESS) questionnaires was used to determine OSA risk. The timing of ACS onset of each subject was established from interview and divided into two groups; nocturnal ACS (12am to 559am) and non-nocturnal ACS (6am to 1159pm). Twenty high risk OSA subjects were selected to undergo level I polysomnography (PSG). All subjects timing of ACS onset, OSA risk, demography, anthropometric measurements, comorbidities, echocardiography and PSG characteristics were analysed. **Result:** A total of 200 subjects were recruited. The prevalence of nocturnal ACS among ACS patients was 19% (38/200). The proportion of patients who were found to be high risk OSA was significantly larger in nocturnal ACS group compared to non-nocturnal ACS group, 36/38 (95%) vs 49/162 (30%), respectively ($p<0.001$). Nocturnal ACS patients were significantly younger, had higher BMI, waist circumference and neck circumference compared to non-nocturnal ACS patients; 50.1 ±8.7 vs 60.4±9.6 years, 33.9±4.3 vs 27.1±5.3 kg/m^2, 106.7±10.3 vs 96.8±11.3cm, 44.6±3.3 vs 39.5±3.3cm, respectively ($p<0.05$). Based on multiple logistic regression analysis, significant predictors for nocturnal ACS were age, OSA risk and neck circumference. There was no significant difference in PSG characteristics in high risk OSA patients between those with nocturnal ACS compared to non-nocturnal ACS. The positive predictive value of combined STOP-BANG and ESS scoring in determining OSA risk was 1. **Conclusion:** The prevalence of nocturnal ACS was 19%. The prevalence of high risk OSA among nocturnal ACS was very high compared to non-nocturnal ACS. There may be a strong association between OSA risk and nocturnal ACS. The significant predictors for nocturnal ACS were age, OSA risk and neck circumference.

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