

**THE INFLUENCE OF INTRAVENOUS PROMETHAZINE  
ON INTRAVENOUS MORPHINE FOR ACUTE PAIN  
MANAGEMENT IN THE EMERGENCY  
DEPARTMENT: A RANDOMIZED  
CLINICAL TRIAL**

**BY**

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## LIST OF ABBREVIATIONS

ADR	Adverse Drug Reaction
AMPA	$\alpha$ -amino-3-hydroxy-5methyl-4-isoxazolepropionate
ASA	American Society of Anesthesiology
CGRP	Calcitonin gene-related peptide
BNF	British National Formulary
BP	Blood Pressure
CNS	Central Nervous System
CTZ	Chemoreceptor trigger zone
DBP	Diastolic blood pressure
DRG	Dorsal root ganglion
ED	Emergency Department
FPS	Facial Pain Scale
GCS	Glasgow Coma Scale
HUSM	Hospital Universiti Sains Malaysia
IASP	The International Association for the Study of Pain
MPQ	McGill Pain Questionnaire
NMDA	<i>N</i> -methyl-D-aspartate
NO	Nitric oxide
NRS	Numerical Rating Scale
PONV	Post operative nausea and vomiting
PR	Pulse rate
SBP	Systolic blood pressure
SD	Standard Deviation
SPSS	Statistical Package for Social Science
VAS	Visual Analogue Score
VASM	Visual Analogue Score during movement
VDS	Verbal Descriptive Scale
WHO	World Health Organization

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## **ABSTRAK**

**PENGARUH SUNTIKAN INTRAVENA PROMETHAZINE KEATAS SUNTIKAN INTRAVENA MORPHINE UNTUK RAWATAN KESAKITAN AKUT DI JABATAN KECEMASAN: SATU KAJIAN KLINIKAL SECARA RAWAK.**

### **Pengenalan**

Sakit merupakan gejala yang sering kali diutarakan oleh pesakit di jabatan kecemasan. Morphine adalah rawatan standard bagi sakit dan mempunyai kesan yang tidak menyenangkan yang berkaitan dengan dos ubat. Promethazine adalah salah satu ubat yang biasa digunakan untuk merawat kesan morphine yang tidak menyenangkan dan dipercayai ada mempunyai komponen penahan sakit. Objektif kajian ini adalah untuk menilai kesan tambahan promethazine ke atas morphine sebagai penahan sakit di dalam rawatan kesakitan akut dan untuk menyiasat kesan sampingan ubat morphine yang diberikan kepada pesakit yang menerima suntikan promethazine.

### **Kaedah**

Kajian telah dijalankan antara August 2008 – Oktober 2009 di Jabatan Kecemasan Hospital Kuala Lumpur dan Hospital Universiti Sains Malaysia (HUSM). Pesakit yang memenuhi kriteria telah dipilih untuk kajian ini. Pesakit akan dimasukkan ke dalam kumpulan morphine dengan normal saline atau morphine dengan

promethazine secara rawak berdasarkan pelan rawak yang telah disediakan. Data dari pesakit meliputi NRS, tekanan darah sistolik, tekanan darah diastolic, kadar nadi, loya dan muntah sehingga masa 60 minit. Borang kaji selidik akan dilengkapkan oleh penyelidik sebelum pesakit meninggalkan jabatan ini.

## Keputusan

Seratus orang pesakit telah terpilih. 28% (n=28) perempuan dan 72% (n=72) adalah lelaki. Purata umur pesakit adalah 36.0 tahun (SD 12.66). 65%(n=65) dari pesakit menerima morphine dengan normal saline dan 45% (n=45) menerima morphine dengan promethazine. Purata tahap NRS pada 0 dan selepas 60 minit adalah 7.2 (SD 0.42) dan 1.9 (SD 0.71) bagi kumpulan menerima morphine dengan normal saline dan 7.2 (SD 0.40) dan 1.8 (SD 0.68) bagi kumpulan morphine dengan promethazine (p=0.960). Purata tahap tekanan darah sistolik pada 0 dan selepas 60 minit adalah 139.8 (SD 7.89) dan 133.4 (SD8.20) untuk kumpulan menerima morphine dengan normal saline dan 141.1 (SD 6.94) dan 134.9 (SD 7.20) bagi kumpulan morphine dengan promethazine (p=0.931). Purata tahap tekanan diastolik pada 0 dan selepas 60 minit adalah 74.6 (SD 7.97) dan 71.4 (SD 6.34) bagi kumpulan menerima morphine dengan normal saline dan 73.6 (SD 7.45) dan 7.5 (SD 6.38) untuk kumpulan yang menerima morphine dengan promethazine (p=0.839). Purata tahap kadar nadi pada 0 dan selepas 60 minit adalah 94.3 (SD 5.06) dan 90.7 (SD 4.89) bagi kumpulan yang menerima morphine dengan normal saline dan 93.8 (SD 4.75) dan 90.2 (SD 4.76) untuk kumpulan yang menerima morphine dengan promethazine (p=0.238). Kadar insiden loya dan muntah bagi

kumpulan yang menerima morphine dengan normal saline adalah 9.1% (n=5) (p=0.626) dan 5.5% (n=3) (p=0.595) sementara bagi kumpulan yang menerima morphine dengan promethazine adalah 8.9% (n=4)(p=0.626) dan 4.4%(n=2)(p=0.595). Semua data diatas adalah tidak signifikasi dari segi statistik.

## **Kesimpulan**

Tiada signifikasi dari segi statistik dan juga klinikal yang berbeza didalam kesan tambahan oleh promethazine ke atas morphine sebagai penahan sakit di dalam rawatan sakit yang akut dan tiada signifikasi yang berbeza untuk kesan samping ubat morphine yang diberikan dengan normal saline dan juga morphine dengan promethazine.

## **ABSTRACT**

### **THE INFLUENCE OF INTRAVENOUS PROMETHAZINE ON INTRAVENOUS MORPHINE FOR ACUTE PAIN MANAGEMENT IN THE EMERGENCY DEPARTMENT: A RANDOMIZED CLINICAL TRIAL.**

#### **Introduction**

Pain is the most common presenting complaint in Emergency Department (ED). Morphine is the gold standard for treatment of pain and has unpleasant effects related to the dosage. Promethazine is among the drugs being used to treat the unpleasant effect and is believed to have analgesic component. The objective of this study is to determine the additive effect of promethazine on morphine as an analgesia in acute pain management and to investigate the adverse drug reaction of morphine in patient given promethazine.

#### **Methodology**

The study was conducted from August 2008 until 30 October 2009 in ED, Hospital Kuala Lumpur and Hospital Universiti Sains Malaysia (HUSM). Patients who fulfill the inclusion criteria were selected for the study. Patients were randomized into morphine with normal saline or morphine with promethazine group based on the randomization plan. Data obtained includes numerical pain score, systolic blood pressure, diastolic blood pressure, pulse rate, nausea and vomiting up to 60 minute. The researcher completed the questionnaire before patients left the ED.

## Results

One hundred patients were enrolled. 28% (n=28) were female and 72% (n=72) were male. Mean age group age was 36.0 (SD 12.66) years old. 65% (n=65) of patients received morphine with normal saline and 45% (n=45) received morphine with promethazine. Mean NRS at 0 and 60 minute were 7.2 (SD 0.40) and 1.9 (SD 0.71) for morphine with normal saline and 7.2 (SD 0.40) and 1.8 (0.68) for morphine with promethazine (p=0.960). Mean systolic blood pressure at 0 and 60 minute were 139.8 (SD 7.89) and 133.4 (SD 8.20) for morphine with normal saline and 141.1 (SD 6.94) and 134.9 (SD 7.20) for morphine with promethazine (p=0.931). Mean diastolic blood pressure at 0 and 60 minute were 74.6 (SD 7.97) and 71.4 (SD 6.34) for morphine with normal saline and 73.6 (SD 7.45) and 70.5 (SD 6.38) for morphine with promethazine (p=0.839). Mean pulse rate at 0 and 60 minute were 94.3 (SD 5.06) and 90.7 (SD 4.89) for morphine with normal saline and 93.8 (SD 4.75) and 90.2 (4.76) for morphine with promethazine (p=0.238). The incidence of nausea and vomiting for morphine with normal saline were 9.1% (n=5)(p=0.626) and 5.5% (n=3)(p=0.595) while morphine with promethazine were 8.9% (n=4)(p=0.626) and 4.4% (n=2)(p=0.595). All above data were no significant statistically.

## **Conclusions**

There is no statistically and clinically significant difference in additive effect of promethazine on morphine as analgesia in acute pain management and there was no significance of adverse drug reaction in morphine with normal saline and morphine with promethazine.