

بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

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A Comparative Study of Preemptive Effect of Pregabalin and Gabapentin on Postoperative Pain After Coronary Artery Bypass Graft Surgery

Thesis

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List of Abbreviations

Abb.	Full term
1ry	Primary
AACE	American Association of Clinical Endocrinologists
ACC	American College of Cardiology
ADA	American Diabetes Association
AHA	American Heart Association
ANOVA	A one-way analysis of variance
AUC	Concentration-time curve
BMI	Body mass index
CABG	Coronary Artery Bypass Graft
CASS	Coronary Artery Surgery Study
CHD	Coronary heart disease
CLCR	Creatinine clearance
COX2	Cyclooxygenase2
CPOT	Care pain observation tool
CSF	Cerebrospinal fluid
DM	Diabetes mellitus
EF	Ejection fraction
GAD	L-glutamic acid decarboxylase
HDLC	High-density lipoprotein cholesterol
HTN	Hypertension
IASP	International Association for the Study of Pain
ICU	Intensive care unit
IL	Interleukins
LAD	Left anterior descending
LDL-C	Low-density lipoprotein cholesterol
LIMA	Left internal mammary artery

List of Abbreviations Cont...

Abb.	Full term
LITA,LIMA.....	Left internal thoracic (mammary) artery
LSD	Least Significant Difference
MI.....	Myocardial infarction
MIDCAB	Minimally invasive direct coronary artery bypass
NCEP	National Cholesterol Education Program
OPCAB.....	Off pump or beating heart bypass surgery
PEEP	Positive end expiratory pressure
PGE2.....	Prostaglandins E2
RCTs	Randomized controlled trials
RGEA.....	Right gastroepiploic artery
RITA,RIMA	Right internal thoracic (mammary) artery
SD	Standard deviation
SVG.....	Saphenous vein graft
Vd.....	Volume of distribution
VDCCs	Voltage-dependent calcium channels

INTRODUCTION

Sternotomy for cardiac surgery causes significant postoperative pain, which has both significant short term and long term consequences. Poorly managed acute postoperative pain may complicate immediate postoperative period and may also cause chronic pain. Though patients usually feel worst pain in the first postoperative day, significant pain may continue up to sixth postoperative day. Adequately managed acute pain lowers the myocardial oxygen demand and decreases the incidence of ischemic episodes. Parenteral opioids, though effective, may cause sedation, respiratory depression, nausea-vomiting and pruritus which may be troublesome. Moreover, opioids may have limited efficacy when pain is associated with activity such as coughing and deep breathing. Options of central neuraxial analgesia in cardiac surgical population is also limited mostly because of perioperative anticoagulant use, and its superiority to PCA opioid is also debatable (*Mazzeffi and Khelemsky, 2011*).

Acute postoperative pain may also have a significant neuropathic component along with nociceptive pain due to peripheral mechanoreceptor stimulation and both central and peripheral sensitization by several mechanisms. During sternotomy, intercostal nerves may be damaged by stretching of the intercostal nerves at the costo-vertebral junction due to sternal retraction and damage may also occur during dissection of internal

mammary artery from the sternum; all of which ultimately contribute to neuropathic pain (*Dahl et al., 2004*).

The gabapentinoids gabapentin and pregabalin are novel antiepileptic drugs, which also have significant efficacy in neuropathic pain and postoperative pain. Both are free from significant side effects and drug interactions in the clinically useful dosage. Both have also been extensively studied in various surgical population for postoperative pain management with varying degrees of success. Few RCTs have addressed the efficacy of perioperative administration of gabapentinoids on acute postoperative pain after cardiac surgery and they reported variable results. Hence, we conducted this systematic review to find out efficacy of gabapentin and pregabalin in acute postoperative pain after cardiac surgery (*Ziyaeifard et al., 2015*)