Middle East Journal of Nursing

May 2016
VOLUME 10 ISSUE 2

ISSN 1834-8742

Editorial

Original Contribution / Clinical Evaluation

Review Articles

FROM THE EDITOR

Abdulrazak Abyad
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(Chief Editor)

This is the second issue this year that is rich with papers from the region,. A paper from Jordan provides a position statement by the current author about using ECT treatment modalities among major depressive patients, especially who are irresponsible to psychotropic drugs and psychotherapies. The author did search strategies database of Pub Med, Google Scholar, and American Psychiatric Association was used; they provided many studies about the current topic with using some words as Depression, Electroconvulsive Therapy, Irresponsible, Benefits and Risks. The current (as position statement) author supports to use Electroconvulsive Therapy among major depressive patients especially who are treatment resistant to other treatment modalities to enhance psychiatric symptoms and illness relief. The author concluded that Electroconvulsive therapy is considered effective treatment modality over patients with major depression especially with severe cases and irresponsible to other treatments modalities. Although it has side effect as life threatening for very strict cases, that can be prevented by holistic medical assessment and care.

A second paper looked at the Impact of Prolonged Bed Rest After Percutaneous Coronary Intervention in Term of Vascular Complications and other Patients' Outcomes. The aim of this paper was to highlight the effect of prolonged bed rest after the PCI procedure in term of vascular complications and other patients' outcomes, and to emphasize the importance of early ambulation post-PCI. The methodology was descriptive design has been used with multiple times measurement. to assess the impact of prolonging bed rest after percutaneous coronary intervention . 30 patients were selected to describe selected patients' outcomes including low back pain, puncture site pain, fatigue, comfort, satisfaction, urinary discomfort, hematoma, and bleeding. Using visual analogue scale (VAS) . This paper recommends that early ambulation after percutaneous coronary intervention is safe and practical, consequently leading to higher levels of satisfaction and comfort and lower level of fatigue, low back pain and urinary discomfort without jeopardizing patient safety.

The third paper looked at the effect of 4- Methylnaltrexone or laxatives for the Management of Opioid-induced Constipation among Palliative Patients on Opioid Therapy. Constipation is a common symptom in advanced cancer patients. Studies have demonstrated that 40 to 80% of patients on a palliative care service have constipation, this proportion increases to ¬¬≥ 90% when patients are treated with opioids. The aim of this article is to determine the effectiveness of methylnaltrexone and laxatives in the management of opioid-induced constipation among cancer patients in palliative care setting, with focus on randomized clinical trials. A comprehensive and extensive online database search of Science Direct Database, PubMed, Springer Online Database, and HINARI/WHO Database was conducted; also reference lists of related studies were searched, six studies fulfilling the inclusion criteria from 1991 to 2009 were selected and formed the basis for this paper. In three studies the laxatives lactulose, senna, co danthramer, misrakasneham, and magnesium hydroxide with liquid paraffin were evaluated, in three methylnaltrexone. In studies comparing the different laxatives evidence was inconclusive. Evidence on subcutaneous methylnaltrexone was clearer; evidence on laxatives for management of constipation remains limited due to insufficient RCTs. Ultimately it can be suggested from the data presented here that subcutaneous methylnaltrexone is effective in inducing laxation in palliative care patients with opioid-induced constipation and where conventional laxatives have failed.

The fourth paper looked at the Association between Vitamin D and Depression Symptoms. Vitamin D (calciferol) comprises a group of seco-sterols, they are considered hormones because of their endocrine, paracrine, and autocrine. Vitamin D reduces the frequency of fractures and falls, reduces symptoms of influenza or colds, and helps to prevent of cardiovascular disease. There are Benefits are seen in depression, Crohn disease, diabetes mellitus, pain, multiple sclerosis, and possibly autism. There are many receptors for vitamin D in the brain, for this reason vitamin D has been linked with mental health problems and depression, as well Vitamin D plays important role in brain development. For patients who show the effectiveness of vitamin D as antidepressant, Vitamin D is one of the most cost-saving therapies and less side effects treatments in psychiatry. There are many number of researches supported the hypothesis of an association between vitamin D and depression symptoms. In addition, to a number of other researches has rejected this association.

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METHYLNALTREXONE OR LAXATIVES FOR THE MANAGEMENT OF OPIOID-INDUCED CONSTIPATION AMONG PALLIATIVE PATIENTS ON OPIOID THERAPY: EVIDENCE-BASED REVIEW

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Abstract

Constipation is a common symptom in advanced cancer patients. Studies have demonstrated that 40 to 80% of patients on a palliative care service have constipation. This proportion increases to ≥ 90% when patients are treated with opioids. Opioids are very effective analgesics, frequently prescribed in cancer pain. Despite proven analgesic efficacy the use of opioids is commonly associated with frequently dose-limiting constipation that seriously impacts on patients' quality of life. Almost all patients on opioids report constipation as the major side-effect. The aim of this article is to determine the effectiveness of methylnaltrexone and laxatives in the management of opioid-induced constipation (OIC) among cancer patients in palliative care setting, with focus on randomized clinical trials. A comprehensive and extensive online database search of Science Direct Database, PubMed, Springer Online Database, and HINARI/WHO Database was conducted; also reference lists of related studies were searched. Six studies fulfilling the inclusion criteria from 1991 to 2009 were selected and formed the basis for this paper. In three studies the laxatives lactulose, senna, co danthramer, misrakasneham, and magnesium hydroxide with liquid paraffin were evaluated, and thirdly methylnaltrexone . In studies comparing the different laxatives evidence was inconclusive. Evidence on subcutaneous methylnaltrexone was clearer; evidence on laxatives for management of constipation remains limited due to insufficient RCTs. Ultimately it can be suggested from the data presented here that subcutaneous methylnaltrexone is effective in inducing laxation in palliative care patients with opioid-induced constipation and where conventional laxatives have failed.

Key words: opioid-induced constipation, methylnaltrexone, laxatives, cancer, management.

Background

Constipation is a common symptom in advanced cancer patients. Studies have demonstrated that 40 to 80% of patients on a palliative care service have constipation (Curtis, Krech, Walsh, 1991; Sykes, 1998). This proportion increases to ? 90% when patients are treated with opioids (Sykes, 1998). Fredericks, Hollis, & Carrie Stricker, (2010) define constipation as less than three defecations per week (or change from usual pattern), or the subjective symptom of difficult, infrequent, or incomplete passage of stool that occurs in up to 90% of patients with advanced cancer receiving opioids and can negatively impact pain management and quality of life. Almost all patients on opioids report constipation as the major side-effect. A hospital survey showed that 87% of patients on strong opioids required the use of laxatives. Among patients using morphine 80% reported constipation (Bouvy, Buurma, Egberts, 2002).

When opiates bind to the opiate receptors in the GI tract, they interfere with peristalsis and the mucous secretion required for bowel movements (Holzer, 2007; Mehendale, Yuan, 2006; De, Cremonini, 2004; Holzer, 2004; Wood, Galligan, 2004; De, Coupar, 1996). Use of exogenous opioids reduces peristalsis (Mehendale et al., 2006), which, together with reduced secretion, increased liquid reabsorption, and increased sphincter tone, leads to the formation of dry, hard stools which are difficult to pass (Pancha, Muller-Schwefe, Wurzelmann, 2007).

The impact of constipation on patients' quality of life is important, especially for cancer patients (Choi & Billings, 2002) whose quality of life is already significantly impaired by the illness itself. Constipation has been deemed by cancer patients to be an even greater source of discomfort than the pain they suffered (Fallon, 1999). According to World Health Organization (WHO), opioids are very effective analgesics, frequently prescribed in cancer pain (WHO, 1996). Despite proven analgesic efficacy, the use of opioids is commonly associated with frequently dose-limiting constipation that seriously impacts on patients' quality of life (Reimer et al., 2009). In addition to its negative impact on quality of life, persistent constipation may lead to serious medical sequelae, including bowel obstruction and fecal impaction, may result in elevated use of prescription drugs and medical services and may affect compliance with pain medications, further compromising pain management strategies (Candrilli, Davis, Iyer, 2009).

Therefore the purpose of this evidence-based review is to answer the following PICOT question for an intervention/therapy, where (P) stand for the population and primary problem, (I) stand for intervention, (C) stand for comparison, (O) stand for outcome, and (T) stand for time it takes to achieve an outcome:

In patients with OIC, and they are cared for within the palliative care unit (P), what is the effect of methylnaltrexone (I) on the management of OIC (O) compared with laxatives (C) within 24 hours (T)?

Methods

Articles were retrieved for review via a combination of computer and manual searches of selected opioid-induced constipation and cancer-related publications. A comprehensive, and extensive online database search of Science Direct Database, PubMed, Springer Online Database, and HINARI/WHO Database was conducted for opioid-induced constipation. Keywords used were "opioid-induced constipation" "methylnaltrexone" "laxatives" "cancer" "management" in multiple combination. Also reference lists of related studies were searched.

The review utilized 6 articles, despite extensive search, which met the inclusion criteria. The inclusion criteria were: 1. Randomized clinical trials (RCTs) 2. It investigated opioid-induced constipation 3. Studies concerned adult participants receiving palliative care. Based on this inclusion criteria a total of 6 articles from 1991 to 2009 were selected and formed the basis for this review.

Level of evidence of the included studies was rated based on the work of Melnyk, Fineout-Overholt, (2005) and Stetler et al., (1998). See table two in the appendix.

The six RCTs analyzed 498 participants; one study was of cross-over design; the others were parallel design, of which three were multi-center. The studies were undertaken in North American, British, Spanish and Indian populations. All participants were at an advanced stage of disease and were cared for within a palliative care setting; most participants had a cancer diagnosis. The average age of participants ranged from 61 to 72 years.

The drugs assessed were subcutaneous methylnaltrexone (Portenoy, 2008; Slatkin, 2009; Thomas, 2008) and the laxatives, all taken orally, were senna (Agra, 1998; Ramesh, 1998; Sykes, 1991); lactulose (Agra, 1998; Sykes, 1991); danthron combined with poloxamer (Sykes, 1991). One study also evaluated the effect of misrakasneham; a drug used in traditional Indian medicine as a purgative, containing castor oil, ghee, milk and 21 kinds of herbs (Ramesh, 1998). In the studies on methylnaltrexone nearly all participants (88% to 99%) were constipated at entry despite taking one or more conventional laxatives.

Findings

Descriptions of included studies in the review are displayed through the table in the appendix.

Co-danthramer versus Senna plus Lactulose

One cross-over study of 51 participants evaluated the effectiveness of co-danthramer versus senna plus lactulose (Sykes, 1991). Both laxatives were in a liquid format. lactulose (Sykes, 1991). Both laxatives were in a liquid format.

Laxation responses: the researcher reports that participants receiving 80 mg or more of strong opioid had a significantly higher stool frequency when taking lactulose plus senna than while receiving co-danthramer. While in a lower dose of opioid, no statistical difference was reported.

Constipation-associated symptoms, pain intensity, opioid withdrawal: not evaluated.

Acceptability and tolerability: diarrhea resulted in suspension of laxative therapy for 24 hours for 15 patients taking lactulose and for five patients taking codanthramer. Researcher reported that six instances of diarrhea occurred at opioid doses of at least 80 mg/day while taking lactulose and senna; none were associated with co-danthramer. Two participants reported perianal soreness and burning while taking codanthramer. Participant preference was similar between the trial arms (15 for lactulose and senna and 14 for co-danthramer), but they also report that twice as many participants disliked the flavor of co-danthramer compared to senna and lactulose.

Misrakasneham versus Senna

One small study of 36 participants evaluated the effectiveness over two weeks of up to 10 ml of misrakasneham versus senna 24 mg to 72 mg (both in liquid format) (Ramesh, 1998).

Laxation responses: there was no statistical difference between the misrakasneham and the senna groups in satisfactory bowel movements. Six participants required rescue laxatives, of which five were in the senna group.

Constipation-associated symptoms, pain intensity, opioid withdrawal: not evaluated

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Acceptability and tolerability: nausea, vomiting and colicky pain were reported by two participants taking misrakasneham. None of the participants withdrew due to inefficiency. Participant preference was split between the groups.

Senna versus Lactulose

One study of 75 participants evaluated the effectiveness over four weeks of lactulose 10 mg to 40 mg versus senna 12 mg to 48 mg (both laxatives were in liquid format). Doses were increased according to clinical response (Agra, 1998).

Laxation response: there was no statistical difference between the senna and the lactulose groups in laxation response. Thirty-seven percent of participants completing the study required combined lactulose and senna to relieve constipation.

Constipation-associated symptoms, pain intensity, opioid withdrawal: there was no statistical difference in the general state of health between the trial arms.

Acceptability and tolerability: three per trial group, reported diarrhea, vomiting and cramps. There was no significant difference in the number of participants who dropped out between the trial arms.

Methylnaltrexone versus Placebo

Two studies evaluated subcutaneous methylnaltrexone versus a placebo (Slatkin, 2009; Thomas, 2008). In one study a single dose (0.15mg/kg or 0.30mg/kg) of methylnaltrexone was administered (Slatkin, 2009); in the other study methylnaltrexone (0.15 mg/kg) was administered every other day for two weeks (Thomas, 2008).

Laxation response: participants who had a laxation response at four hours ranged from 48% to 62% in the methylnaltrexone trial groups and 13% to 15% in the placebo groups. At 24 hours it was 52% to 68% in the active trial arms and 8% to 27% in the placebo groups. A significant difference in laxation response favoring the treatment group was also found in the multi dose study at days three, five, seven, nine, eleven, and thirteen (Thomas, 2008). In the single-dose study the researcher states that the study demonstrated no dose-response relationship (between 0.15 mg and 0.3 mg per kilogram doses) in laxation and no correlation between laxation response and baseline opioid dose (Slatkin, 2009). Dose response was not assessed in the other study but at day eight, if participants had fewer than three rescue-free laxations, the initial volume of the study drug was doubled (to 0.30 mg of methylnaltrexone per kilogram) (Thomas, 2008).

Constipation-associated symptoms, pain intensity, opioid withdrawal: in the multi dose study they assessed pain and symptoms of opioid withdrawal using the Modified Himmelsbach Withdrawal Scale, at three time points; they found no significant difference between the trial arms (Thomas, 2008). In the single-dose administration of methylnaltrexone study there was no overall change from the baseline pain scores or in having symptoms of opioid withdrawal (Slatkin, 2009).

Acceptability and tolerability: in the single-dose study the researcher reports that during the double- blind and subsequent open-label phase 19 participants experienced severe adverse events that were possibly related to methylnaltrexone, with some experiencing more than one event. These were: 15 incidents of abdominal pain, three of increased sweating, two of increased pain and one each of burning at the injection site, vomiting, diarrhea, asthenia, increased blood pressure, dehydration, muscular cramps, loss of consciousness, tremor, delirium, hallucination, dyspnea and flushing. In the same study serious adverse

events did not occur during the trial phase but were reported in three participants during the subsequent open-label phase. One participant had flushing and another delirium possibly related to methylnaltrexone; a third had severe diarrhea and subsequent dehydration and cardiovascular collapse considered to be related to the drug (Slatkin, 2009). In the other study they report that severe adverse events occurred in 8% of participants in the methylnaltrexone group and 13% in the placebo group (Thomas, 2008). The 11 serious adverse events in those who received methylnaltrexone were: aneurysm ruptured, respiratory arrest, dyspnea exacerbated, suicidal ideation, aggression, malignant neoplasm progression, concomitant disease progression, myocardial ischemia, coronary artery disease aggravated and congestive heart failure aggravated. The investigators considered all serious adverse events as either not related or unlikely to be related to the trial drug.

Dose Ranging Trial of Methylnaltrexone

One small study of 33 participants compared the effectiveness of 1 mg (n = 10), 5 mg (n = 7), 12.5 mg (n =10) and 20 mg (n =6) of subcutaneous methylnaltrexone (Portenoy, 2008).

Laxation response: the study reports that the median time to laxation was 1.26 hours for patients dosed at 5 mg or greater and in the 1mg group it was greater than 48 hours.

Constipation-associated symptoms, pain intensity, opioid withdrawal: the researcher reports that there was no evidence of methylnaltrexone-induced opioid withdrawal, also there was not any difference in patient satisfaction scores between the dose groups.

Acceptability and tolerability: all participants experienced at least one treatment-emergent adverse event. There was no significant difference between the lower dose group compared to the other doses in the proportion of participants who had a treatment related adverse event or discontinued because of an adverse event. The types of adverse events were similar between the dose groups. The most common adverse event was abdominal pain. Two participants discontinued the trial because of an adverse event. One was an 84-year old man who withdrew due to syncope (12.5 mg dose). The event was transient and resolved without sequelae; the investigators assessed that it was related to the medication. A 20-year old man was withdrawn after receiving three doses due to abdominal cramping, assessed as probably related to the study medication.

Summary

This review sought to determine the effectiveness of the administration of laxatives and the opioid antagonist methylnaltrexone for the management of constipation in palliative care patients. Six studies were identified. Studies either compared the effectiveness of two different laxatives, compared methylnaltrexone with a placebo or different doses of methylnaltrexone. The effectiveness of methylnaltrexone was not compared with a laxative and none of the studies compared a laxative with a placebo; all comparisons were made between different laxatives.

The review found that laxative use in the management of constipation in this patient group is based on limited research evidence; specifically, there have been no RCTs on any laxative that have evaluated laxation response rate, patient tolerability and acceptability.

There have been a few RCTs on the comparative advantages of different laxatives. The limited evidence from these studies suggests that the laxatives evaluated, including the commonly used laxatives lactulose and senna, were of similar effectiveness in this patient group. There is some evidence on the effectiveness of methylnaltrexone, indicating that in comparison to placebo and in patients where conventional laxative therapy is sub-optimal, methylnaltrexone improves laxation.

Table 1: Description of included studies

Authors	Purpose	Sample size	Outcomes/ Findings	Methods
(Agra, 1998).	To determine treatment and cost efficacy for senna and lactulose in terminal cancer patients treated with opioids.	91	Main outcome were defecation-free intervals of 72 hours, days with defecation, general health status and treatment cost. Researcher recommends use of senna based on cost advantage.	RCT, single-center, parallel-group design.
(Portenoy, 2008).	To assess the efficacy and safety of subcutaneous methyl naltrexone in a population of patients with advanced illness and opioid-induced constipation	33	Laxative response (bowel movement) within 4 hours of dosing. Methyl naltrexone relieved opioid-induced constipation at doses more than or equal to 5 mg in patients with advanced illness, and did not reduce analgesia or cause opioid withdrawal symptoms.	RCT, multi-center, parallel-group design
(Ramesh, 1998).	To compare a liquid Ayurvedic (herbal) preparation (Misrakasneham) with a conventional laxative tablet (Sofsena) in the management of opioid-induced constipation in patients with advanced cancer.	36	Researcher recommends use of misrakasneham based on favorable toxicity profile and cost advantage. With misrakasneham 47% of patients have unsatisfactory bowel movement.	RCT, single-center, parallel-group design
(Slatkin, 2009).	To examine the safety and efficacy of a single subcutaneous injection of methyl naltrexone versus placebo followed by open-label active treatment for up to 4 months in patients with advanced illness and OIC.	154	Approximately half of the methyl naltrexone responders defecated within 30 minutes of dosing; methyl naltrexone was efficacious in rapidly inducing laxation and was generally well tolerated in patients with advanced illness and OIC.	Multicenter, single-dose, double-blind, randomized, placebo-controlled study
(Sykes, 1991).		51		RCT, single-center, cross-over group design
(Thomas, 2008).	To evaluate the safety and efficacy of methyl naltrexone 0.15 mg/kg subcutaneously every other day for two weeks.	133	Methyl naltrexone significantly induced laxation within four hours after the first dose compared with placebo.	RCT, multi-center, parallel-group design

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THE IMPACT OF PROLONGED BED REST AFTER PERCUTANEOUS CORONARY INTERVENTION IN TERMS OF VASCULAR COMPLICATIONS AND OTHER PATIENTS' OUTCOMES

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Abstract

Background: The use of Percutaneous Coronary Intervention (PCI) has achieved extensive importance in the management of Cardiovascular diseases, in order to minimize post-PCI complications. Patients are restricted to bed rest for various periods to prevent vascular complications. Prolonged bed rest may accompany patient's discomfort such as back pain, fatigue, dissatisfaction and other patient outcomes.

Objective: The aim of this paper was to highlight the effect of prolonged bed rest after the PCI procedure in terms of vascular complications and other patient outcomes, and to emphasize the importance of early ambulation post-PCI.

Method: Descriptive design has been used with multiple times measurement to assess the impact of prolonging bed rest after percutaneous coronary intervention. 30 patients were selected to describe selected patients' outcomes including low back pain, puncture site pain, fatigue, comfort, satisfaction, urinary discomfort, hematoma, and bleeding using visual analogue scale (VAS).

Results: This paper recommends that early ambulation after percutaneous coronary intervention is safe and practical, consequently leading to higher levels of satisfaction and comfort and lower level of fatigue, low back pain and urinary discomfort without jeopardizing patient safety.

Key words: Early ambulation, Patient outcomes, Percutaneous coronary intervention, Prolonged bed rest, Vascular complications.

Introduction

Cardiovascular diseases are considered the leading cause of death worldwide. They are responsible for 30% of all global deaths (WHO, 2011) so, there is a constant drive to develop innovative methods and devices that enable health care professionals to achieve diagnostic or therapeutic goals while reducing procedural related risks and enhancing patients' satisfaction (Bechara, Annambhotla & Lin, 2010).

Cardiovascular disease according to the American Heart Association is defined as any abnormal condition characterized by dysfunction of the heart and blood vessels. It includes many groups such as cerebrovascular diseases, peripheral arterial diseases, rheumatic heart diseases, and coronary artery diseases which account for 42% of all global deaths that are caused by cardiovascular diseases (WHO, 2011).

Beside drug therapy, invasive technology for the management of coronary artery diseases has improved considerably over the past two decades. One of these technologies is Percutaneous Coronary Intervention (PCI) which has become a routine diagnostic tool in cardiology departments worldwide, and has a substantial role in the management of coronary artery diseases, and is considered the most common invasive procedure used for this entity (Augustin, Quadros & Sarmento-Leite, 2010; Tongsai & Thamlikitkul, 2012; Schiks et al, 2008, Haj-Hassan, Hamdan-Mansour, Zeilani & Nabolsi, 2013).

Percutaneous coronary intervention procedures require an arterial access to reach coronary arteries and cardiac chambers and that is performed by insertion of device called a sheath in the selected artery. Although the procedure is generally safe, many vascular complications after removing of sheath do occur (Line, Guffey, VanRiper & Kline-Rogers, 2006).

In the USA; 3% of patients experience vascular complications after percutaneous coronary intervention (Dumont, 2007). These complications range from bleeding, ecchymosis, and hematoma (Sabo, Chlan & Savik, 2008) to more serious pseudoaneurysms and arteriovenous fistula (Konstance et al, 2004). Keep in mind that these vascular complications are responsible for increasing morbidity, length of stay, increase patient distress, and decrease patient comfort (Pracyk et al, 1998 & Konstance et al 2004).

Since the most common arterial access used in percutaneous coronary intervention procedures is femoral artery; effective control of femoral arterial access has received intense focus in the past decades (Hassan, Hasan-Ali & Ali, 2013; Bechara et al, 2010).

Traditionally, immobilization including prolonged bed rest for six hours or more after percutaneous coronary intervention has been used to reduce vascular complications (Schiks et al, 2008), but this prolonged bed rest reveals on the other hand, many complications related to patients' comfort level and general well-being (Chair, Ya, Choi, Wong, Sit &Ip, 2012).

Prolonged bed rest for six hours or more after percutaneous coronary intervention leads to increase the level of low back pain and urinary discomfort, and decrease the level of comfort and general well-being (Augustin et al, 2010 & Chair et al, 2012). Keep in mind that these complications contravene the international attempts to achieve diagnostic or therapeutic goals for percutaneous coronary intervention while reducing procedural related risks and enhancing patients' satisfaction (Bechara et al, 2010).

Cardiovascular diseases (CVD) are defined according to the World Health Organization as a group of disorders of the heart and blood vessels. It includes coronary heart disease, cerebrovascular diseases, peripheral arterial diseases, and congenital heart disease. Cardiovascular diseases cause more than half of all deaths across the European Region (WHO, 2014).

Invasive diagnostic tests such as cardiac catheterization and other interventional procedures such as percutaneous transluminal coronary angioplasty (PTCA) are becoming done widely across cardiology departments (Haj-Hassan et al, 2013). Since their introduction in the 1970s, the number of percutaneous coronary intervention procedures has increased noticeably (Schiks et al, 2008). The procedures include insertion of different sized pieces called sheaths to femoral or radial artery to gain an access to the vascular system (Haj-Hassan et al, 2013) Then the cardiologist will inject special dye to allow for exploration of coronary circulation under X-ray guidance. However, the femoral site is considered as the most common site due its large diameter and easier accessibility, but unfortunately, it has higher complication (Nathan & Rao, 2012), therefore, there is an urgent need to develop ways and plans to reduce such complications, for reducing procedure related risks and increasing level of patient's satisfaction.

In post percutaneous coronary intervention, the complications are not infrequently reported. It has been outlined widely in the literature, that those complications include hematoma at puncture site (Stone & Campbell, 2012; Cosman, Arthur & Natarajan, 2010; Anderson, Bregendahl, Kaestel, Skriver & Ravkilde, 2005; Sabo, Chlan & Savik, 2008) and bleeding (Schiks et al, 2008; Cosman et al, 2010; Anderson et al, 2005; Chair et al, 2012; Rezaei-Adaryani, Ahmadi, Asghari-Jafarabadi, 2009).

The definition of hematoma varies across research articles; moreover its way of measurement is vague as well. Stone and Campbell (2012) mentioned this unclear issue, while Cosman et al (2011) reported that hematoma at vascular site is the most frequent complication. The authors defined

hematoma as an area of swelling of the underlying tissue at the vascular access site with or without associated bruising. Andersen et al (2005) stated that hematoma development is the most frequent complication for patients who underwent percutaneous coronary intervention or coronary angioplasty (CA). The aims were to determine the frequency of hematoma after percutaneous coronary intervention and coronary angioplasty, and to identify the predictors of its development. They include 463 subjects, of these 322 patients underwent coronary angioplasty, and 141 underwent percutaneous coronary intervention. From a total of forty -one patients who develop hematoma, 6 patients (1.3%)_developed hematoma larger than 10 cm, while 35 (7.6%) developed hematoma between 5-10 cm, moreover, the percentage of hematoma in coronary angioplasty group was 7.5 % which is less than percutaneous coronary intervention group (12.1%).. Further the most statistically significant risk factor was multi artery puncture (more than one time) which had odds ratio (3.4) and confidence interval CI (1.4-8.0) .The development of hematoma due to this risk factor was 1.7, and 7.9 for coronary angioplasty and percutaneous coronary intervention respectively. Other risk factors include female gender and use of low molecular weight heparin (LMWH).

Sabo et al (2008) tried to if determine patient's characteristics and co-morbidities contributed to vascular complications. The outcomes confirmed the previous study, that being female is associated with higher incidence of vascular complication. In addition, the body surface area was also statistically significant to hematoma development among percutaneous coronary intervention patients, odds ratio equal to 0.88 and 95% CI equal to (0.80-0.98)

The other most commonly seen complication was bleeding from the puncture site. Chair et al (2012) defined significant bleeding as "blood loss estimated at greater than 100 ml or bleeding that lead to further attempts to reestablish homeostasis by manual pressure", whereas, Schiks et al (2008) described bleeding as any loss of blood from puncture site needed for prolong bed rest or compression.

Moreover, Rezaei-Adaryni et al (2009) measured the bleeding by measuring the surface area of blood at the dressing site using a two dimensional ruler with 1 cm precision.

To reduce the complications (hematoma and bleeding) manual hard compression by nurses or using mechanical applications over puncture site is needed. Further, bed rest in the supine position for 2 to 24 hours is advised. Nevertheless, the length of bed rest after percutaneous coronary intervention varies, and may fluctuate from 2 to 24 hours. Prolonged bed rest without movement in the supine position is uncomfortable for most of the patients (Chair et al, 2012).

Due to such practices (manual compression and prolonged bed rest), most patients have some complaints or discomforts such as low back pain, urinary discomfort, low level of comfort, puncture site pain, low level of patient satisfaction (Chair et al, 2012; Rezaei-Adaryani, 2009). Those complaints have been outlined in recent literature (Sabo et al, 2008; Chair et al, 2012; Rezaei-Adaryani, 2009; Chair, Li & Wong, 2004; Augustin et al, 2010).

According to Chair et al (2004), back pain is common among post cardiac catheterization patients, and explained that this is due to prolonged bed rest ranging from 3- 24 hours. In their study, the authors aimed to identify factors associated with back pain after percutaneous coronary intervention. They found that turning privilege (hourly positioning to supine, right lying, left lying related to lower level of back pain ($p = 0.001$), as well as age. The older subjects reported lower level of pain compared with younger ones. ($p = 0.04$) Finally, with p value equal to 0.006, the body weight was statistically significant, which means that the back pain is more frequent in heavier subjects.

In a randomized control trial (RCT) done by Augustin et al (2010) in Brazil, the results uncovered that the shorter bed rest was better than prolonged bed rest regarding back pain. The pain was reported in 22% versus 39% ($p = 0.001$), for shorter bed rest and prolonged bed rest respectively.

Understanding factors that are related to low back pain post percutaneous coronary intervention may help the nurses to apply appropriate nursing intervention to improve and promote patients' comfort (Chair et al, 2004).

Another randomized control trial was done by Rezaei-Adaryani et al (2009) to assess the effect of changing position and early ambulation on specific patient outcomes including level of comfort, satisfaction, and fatigue. Patients' outcomes were assessed after percutaneous coronary intervention six different times., The results revealed that the level of comfort, satisfaction and fatigue were statistically significant with p value less than 0.001. The authors conclude that longer duration in bed after percutaneous coronary intervention, showed lower level of comfort and satisfaction, and the level of fatigue was be higher.

Urinary discomfort is another patient complaint. Chair, Thompson & Li (2007) stated that most patients have uneasiness to urinate in bed while they are in a supine position using urinal or bedpan. The authors compared the level of urinary discomfort between patients who ambulated at 4 hours and 12-14 hours after cardiac catheterization Further, the results revealed that both groups were statistically different on urinary discomfort ($p = 0.006$). They conclude that prolonged bed rest will result in higher level of urinary discomfort. Five years later, a study done by Chair et al (2012) confirmed the previous result.

In conclusion, vascular complications are common among patients undergoing percutaneous coronary intervention; multi artery puncture and female gender were mentioned repeatedly in the literature as risk factors. Patient outcomes such as back pain, urinary discomfort, satisfaction and comfort have been assessed frequently, especially in the first few hours that fellow percutaneous coronary intervention. The optimal bed rest time varies across literature, because prolonged bed rest can negatively affect those outcomes, a lot of studies confirm the safety of early mobilization compared to late mobilization in terms of bleeding and hematoma, in addition to better patient outcomes.

Understanding these complications and patients' outcomes may help nurses and other health care providers afford the patients with suitable nursing interventions individually (Chair et al, 201) without jeopardizing patient safety.

Significance of the study

Percutaneous coronary intervention is widely used for diagnosis and management of cardiac diseases and considered a key clinical tool for this entity (Augustin et al 2010; Tongsai et al 2012; Schiks et al, 2008, Haj-Hassan et al, 2013). This produces many serious vascular complications (Line et al 2006). One method to prevent these vascular complications is prolonged bed rest (Schiks et al, 2008), but this affects negatively on patient comfort level and general well-being (Augustin et al, 2010 & Chair et al, 2012). These factors motivated health care professionals for many years to establish a protocol after percutaneous coronary intervention considering patient comfort as well as patient safety(Bechara et al, 2010). Therefore this study is extending global studies that aimed to establish such a protocol.

Keep in mind that it is important to base nursing practices on high level evidence to improve the care given to individuals undergoing percutaneous coronary intervention, so nurses need to engage in developing evidence to support guidelines (Rolley, Davidson, Salamonson, Fernandez & Dennison, 2008).

The results of this study will be used in building of evidence based practice that aims to improve patient outcomes after percutaneous coronary intervention which will be reflected positively on patients as well as the health care system in Jordan.

The purpose of the study

The purpose of this study is to investigate the impact of prolonged bed rest after percutaneous coronary intervention on patients' outcomes.

Research questions

• Is prolonged bed rest after percutaneous coronary intervention considered a golden method to prevent vascular complications?

• What is the effect of prolonged bed rest after percutaneous coronary intervention on other patient outcomes?

Methodology

Design

Descriptive design has been used with multiple times measurement. The main purpose of using this design is to assess the impact of prolonging bed rest after percutaneous coronary intervention on patients' outcomes (low back pain, puncture site pain, fatigue, comfort, satisfaction, urinary discomfort, hematoma, and bleeding).

Setting

This study has been conducted in the Jordan University Hospital.

Sampling

The target population was all Jordanian patients who underwent percutaneous coronary intervention, while the accessible population was all Jordanian patients who underwent percutaneous coronary intervention in the Jordan University Hospital. Convenience sampling has been used for a select 30 participants who met the inclusion criteria.

Inclusion criteria was any patient age of 18 years or older who underwent diagnostic percutaneous coronary intervention via femoral approach and received a dose of unfractionated heparin (100 unit\kg) during the procedure.

While the exclusion criteria was any patient with aortic failure, use of low molecular weight heparin, unfractionated heparin, or glycoprotein IIb\IIIa inhibitors within the previous 24 hours before the procedure or after the procedure; those who had history of hemorrhagic diathesis (bleeding tendency), had a history of chronic low back pain, had diastolic or systolic blood pressure higher than 100 and 180 mm Hg respectively pre or post procedure, or who developed any vascular complications during percutaneous coronary intervention.

Instruments

Six instruments have been used in this study, These instrument are five Visual Analogue scales (VASs); each one consisting of a 100-mm long line, and two dimensional ruler with 1 cm precision.

Five Visual Analogue Scales, each one consisting of a 100-mm long line was used to assess the following subjective data: low back pain, puncture site pain, fatigue, comfort, satisfaction, and urinary discomfort.

The Visual Analogue Scales consist of a 100-mm long line with the left anchor representing "no pain, n fatigue, no comfort, no satisfaction, no urinary discomfort", and the right anchor representing "the worst possible pain, the highest possible fatigue, the highest possible comfort, the highest possible satisfaction, the highest possible urinary discomfort". Keep in consideration that Visual analogue scale is frequently used to assess subjective feelings such as pain, comfort, and fatigue (Rezaei-Adaryani et al, 2009; Chair et al, 2007).

Also, a two dimensional ruler with 1 cm precision was used to measure the hematoma and bleeding; this method is frequently used in the literature ((Rezaei-Adaryani et al, 2009; Chair et al, 2007).

Hematoma was detected by observing the presence of skin discoloration at the puncture site then measuring the distance between its borders with this ruler, and bleeding was detected by observing the dressing on the puncture site then measuring the distance between its borders with the same ruler.

Data collection procedure

For eligible patients who underwent percutaneous coronary intervention; demographic data which included gender, age, smoking status, weight, and height were collected firstly Secondly, the patient was assessed after two hours of bed rest for the following variables (level of low back pain, level of puncture site pain, level of fatigue, level of comfort, level of satisfaction, level of urinary discomfort, amount of hematoma if present, and amount of bleeding if present). Keep in consideration that this assessment aimed to make baseline information about the patient's outcomes.

Thirdly, the same variables were assessed again after four hours of bed rest, and finally, the same variables were assessed again after six hours of bed rest.

Ethical consideration

This study has been approved by the academic research committee of the faculty of nursing in the University of Jordan; also it was approved by the institutional review board of the Jordan University Hospital. Furthermore, consent form was signed by all participants before the beginning the study, and data collector informed the subjects that the information will be used for the purpose of this study only, and that was explained to all subjects before beginning the study.

The subject was assured that he or she has the right to refuse participation or to withdraw from the study any time; all information will be kept in a locked cabinet at the facility of nursing, with researcher having sole access alone, through which the above confidentiality will be maintained.

Data analysis plan

Data analysis was carried out using the Statistical Package for the Social Science, SPSS 16.0 for windows. Descriptive analysis (mean, frequency, and percentage) were used for analyzing the demographic data In addition paired-samples T test was used to detect if there was a significant difference between the means of the variables that were assessed after four hours of bed rest and the means of the variables that were assessed after six hours of bed rest.

The result

Demographic data:

A total of 30 subjects participated in this study. Table 1 shows the demographic data. The mean age of the subjects was 59.9 years; 57% of subjects were male and 43% were female the mean of their weight was 85.8 kg and height 165.1cm. Finally around 57% were smokers.

Table 1: Demographic data of participants (N=30).

Gender Male / Female	Smoking Yes / No	Age	Weight	Height
17 (57%) / 13(43%)	17 (57%)/ 13(43%)	59.9 (11.9)	85.8 (16.4)	165.1 (8.6)

Table 2: Comparison of the patients' outcomes at three different time intervals (N=30).

Patients' outcomes	After two hours	After four hours	After six hours	*P value
Level of low back pain	21.6	36.7	49.9	< 0.001
Level of puncture site pain	32.3	22.1	16	0.001
Level of fatigue	34.9	47.5	57.9	<0.001
Level of comfort	58.6	51.1	44.5	0.001
Level of satisfaction	63.1	59.2	50.6	0.001
Level of urinary discomfort	31.8	48.8	64.3	<0.001
Hematoma (cm)	0.70	0.87	0.93	0.161
Bleeding (cm)	0.93	1.13	1.30	0.057

* The p values refer to the difference between the four and the six hour only.

Comparison of the patients' outcomes at different time intervals:

This comparison presented in Table 2 shows the mean values of the patients' outcomes at three different time intervals, at 2, 4, and 6 hours after bed rest respectively.

The level of low back pain increased between the three intervals considerably. This increase was statistically significant between the second interval (4 hours) mean value equal to 36.7 and the third interval (6 hours) mean value equal to 49.9, with p value less than 0.001. Moreover, the level of fatigue also increased markedly among the three different intervals, which was also statistically significant between the second interval (4 hours) mean value equal to 47.5 and the third interval (6 hours) mean value 57.9 with p value less than 0.001. Finally, urinary discomfort also increased, which was also statistically significant between the second interval (4 hours) mean value equal to 48.4 and the third interval (6 hours) mean value equal to 64.3, with p value less than 0.001.

The puncture site pain decreased among different intervals, ranging from 32.3 to only 16. The satisfaction level is decreased among the three intervals. This reduction was statistically significant between the second interval (4 hours) mean value equal to 59.2 and the third interval (6 hours) mean value equal to 50.6, with p values equal to 0.001. Moreover, the comfort level is decreased among the three intervals. This reduction was statistically significant between the second interval (4 hours) mean value equal to 51.1 and the third interval (6 hours) mean value equal to 44.5 , with p values equal to 0.001.

The patients as expected, experience vascular complications such as bleeding and hematoma, but the occurrence of those vascular complications were not statistically significant among the second and third intervals.

Discussion

Previous study showed that extended bed rest in the supine position is hard for many patients who have undergone percutaneous coronary intervention (Chair et al., 2003). The results of this study showed that regarding the levels of low back pain, fatigue and urinary discomfort, there were significant differences between the second and third intervals.

The main findings of this study were that the amount of patient outcomes are related to the duration of bed rest. The longer the patients are required to remain in complete bed rest in supine position after percutaneous coronary intervention without ambulation, the higher the levels of low back pain, fatigue and urinary discomfort they will experience.

On the other hand, the results of this study revealed that regarding the puncture site pain, satisfaction and comfort level, all are decreasing with time. There were statistically significant differences between the second and the third intervals. We can conclude that the longer the patients are required to remain in complete bed rest in supine position after percutaneous coronary intervention without ambulation, the lower the puncture site pain, satisfaction and comfort level they will experience. This conclusion has been confirmed previously by Reazaei-Adaryani et al (2009).

The findings also show that the patients experience vascular complications at the puncture site such as bleeding and hematoma, but these findings did not statistically significantly increase or decrease between the second and the third intervals. This result agrees with the previous literature that confirmed no difference in comparing of vascular complications among patients with early versus late ambulation.

Implementation

The findings of this study will be used in two approaches; research and practice. These finding will help the researcher to investigate more about these complications, and these findings also will help the nurses to develop evidence-based policy regarding bed rest post percutaneous coronary intervention, instead of anecdotal evidece.

Limitation

The first limitation in this study is the design, so we recommend performing further studies with more powerful design (e.g., randomized controlled trial). The second limitation in this study is the sample and setting, with small sample size, so we recommend enlarging the sample and enroll more hospitals in future studies.

Conclusion and recommendations

Based on the statistically significant results, we recommend early mobilization after percutaneous intervention, rather than late, which is not common in Jordanian hospitals in general. This change in practice aims to alleviate some patients' outcomes such as low back pain, fatigue, and urinary discomfort, in addition to improving the level of comfort and satisfaction. Also the new proposed change will not affect the levels of both bleeding or hematoma or jeopardize patient's safety.

To sum up, the longer the patients are required to remain in complete bed rest in supine position after PCI without ambulation, the higher the levels of low back pain, fatigue and urinary discomfort, and the lower level of satisfaction and comfort, without affecting the level of hematoma and bleeding.

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ELECTROCONVULSIVE THERAPY USE AMONG DEPRESSIVE INPATIENTS: POSITION STATEMENT

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Abstract

Introduction: Major Depressive Disorder is one of the most common mental health problems around the world; while Electroconvulsive Therapy is one of the most common methods for treating the disorder; it has a correlated effect over patients with depression.

Purpose: The purpose of this paper is to provide a position statement by the current author about using ECT treatment modalities among major depressive patients, especially those who are unresponsive to psychotropic drugs and psychotherapies.

Methods: Search strategies included database of Pub Med, Google Scholar, and American Psychiatric Association; they provided many studies about the current topic using some words such as Depression, Electroconvulsive Therapy, Unresponsive, Benefits and Risks.

Results: The current (as position statement) author supports the use of Electroconvulsive Therapy among major depressive patients especially those who are treatment resistant to other treatment modalities to enhance psychiatric symptoms and illness relief.

Conclusion: Electroconvulsive therapy is considered an effective treatment modality of patients with major depression especially with severe cases and unresponsive to other treatments modalities. Although it has side effects such as being as life threatening for very strict cases, that can be prevented by holistic medical assessment and care.

Introduction

Mental health problems were international challenges that have a significant contribution in illness burden over the entire world (Blake, 2012). Major Depressive Disorder (MDD) was one of the common health problems and it was estimated to affect 121 million adults worldwide (World Health Organization, 2012). However, Electroconvulsive Therapy, ECT, was one of the most common methods for treating major depression safely and effectively (Keltner & Boschini, 2009). American Nurses Association, APA, (2014) defined the position statement as an explanation, a justification or a recommendation for a course of action that reflects the author's stance according to literature review regarding the concern.

MDD, can be defined as a period of at least two weeks during which there is either depressed mood or the loss of interest or pleasure in nearly all activities (APA, 2000). MDD was associated with significant morbidity, mortality, and disability that burdens the individual and his/ her family, and contributes to impaired cognitive skills and deterioration of the individual life aspects (Blake, 2012; Nahas & Sheikh, 2011). Symptoms of depression included feeling of hopelessness and helplessness, loss of energy, anhedonia, agitation, fatigue, withdrawn, weight loss or gain, fatigue, and inappropriate thinking (Townsend, 2011).

Treatment modalities of this disorder were stated on severity which was mild, moderate and severe, that included psychotherapy, psychopharmacology and ECT for severe phases (Tusaie & Fitzpatrick, 2013). Electroconvulsive Therapy, defined as the safe induction of a series of generalized epileptic seizures for therapeutic purposes, using brief pulse stimulation techniques under anesthesia and muscle paralysis (Baghai & Möller, 2008).

The purpose of this paper is to provide a position statement by the current author about using ECT treatment modalities among major depressive patients, especially those who are unresponsive to psychotropic drugs and psychotherapies.

The paper will be organized as Background about ECT with positive and negative issues, position statement of current author about ECT with suggested actions that are integrated with National Center for Mental Health, NCMH, of recommendation and possible solutions for ECT use, summary and conclusion and finally acknowledgment and references.

Background

The purpose of literature review is to identify proponent and opponent studies of ECT in terms of effectiveness, benefits and co-morbidity, side effects and contraindications and social concerns and cost effectiveness of ECT.

ECT is one of the oldest biological treatments for psychopathology. It was introduced as somatic therapy since 1938 (O'Reardon, Cristancho, Ryley, Patel & Haber, 2011). It was used in treating MDD and other psychiatric illness su as Schizophreniform disorder or schizoaffective disorder and mania (Tess& Smetana, 2009). ECT was used as first line therapy in major depression, bipolar depression, bipolar mania, positive schizophrenia, postpartum psychosis, various movement disorders and is immediately required in suicidal, catatonia and assaultive behaviors (Keltner& Boschini, 2009). Although it has different adverse events and risks which must not be ignored such as somatic pain, cognitive side effects and medical contraindications (Baghai& Möller, 2008).

Proponent Studies

Effectiveness. In a randomized control study, the remission rate of ECT users among unipolar and bipolar depression patients was more than 60% in comparison with drugs modalities group (Bailine et al., 2010). Depressive patients who are treatment-resistant on drugs and severe cases were well treated by ECT as evidenced by more than 24 studies with RCT and case reports (Little, 2009). There was evidence that bilateral electroconvulsive therapy improved symptoms more than unilateral therapy, and that high dose therapy was more effective than low dose therapy (Al-Harbi, 2012; Bailine et al., 2010; Little, 2009). Additionally, at experimental study of more than 900 participants of depressive patients that, showed response rate of ECT from eight to twelve sessions two to three times weekly, results were presented that a response rate of 81% especially among older adults, authors concluded that older patients, more severely ill patients, psychotically ill patients and patients without personality disorders had the highest responder rates on short term ECT (Nordenskjöld, Knorring & Engström, 2012).

Positively, on systematic chart review of a study with 42 participants who were diagnosed with MDD, response rate was 85.7% (36/42), and the study noted that ECT as longterm therapy was recommended for older ages than others and among those who complained of treatment resistant depression Furthermore the procedure assisted in decreasing relapse for recurrent relapsed patients in addition to psychotropic drugs as Sertraline or Mirtazapine (Tokutsu et al., 2013). It is effective more rapidly than other psychotherapy agents especially for severe cases and resistant cases (Cusin & Dougherty, 2012) and with response rates as high as 95% for patients with MDD with psychotic features with recommended six to twelve sessions (Tirmizi, Raza, Trevino & Husain, 2012). Moreover, as a literature review study of more than 50 studies, continuous and maintenance ECT had valuable treatment modalities to prevent relapse and recurrence of mood disorders, especially MDD (Petrides, Tobias, Kellner & Rudorfer, 2011).

Benefits and co-morbidity. ECT had beneficence on treatment of co-morbidity of illness, which means co-occurrence of two or more disorders in a specified period (Tusaie& Fitzpatrick, 2013). On case report study of a woman complaining of anorexia nervosa and co-morbid severe major depressive disorder, was treated with ECT and developed a positive effect on the depressive symptoms and had some positive effect on weight gain (Poutanen, Huuhka & Perko, 2009). While another case report study of three cases co-occurred with Obsessive-Compulsive Disorder; the result showed that the patients' depressive symptoms improved after the ECT procedures beside improvement of the condition of all three OCD patients OCD significantly (Liu et al., 2014). It provided effective removal of psychomotor inhibition, appetite loss, and delusions for a case with fronto temporal dementia (Kobayashi, Inoue, Shioda & Kato, 2012). Additionally, ECT as maintenance therapy provided a safe and efficacious option in epileptic patients with major depressive disorder without increasing of seizure threshold (Kucia, Stepanczak & Tredzbor, 2009).

Regarding medical conditions, it was applicable to a case of older adult with aortic stenosis but with strict observation and follow up of multidisciplinary team (O'Reardon et al., 2011). Moreover, post stroke depression was treated in some cases by ECT with efficient outcome but with holistic monitoring for avoiding unexpected outcomes (Lökk & Delbari, 2010). Furthermore, ECT was an effective, safe, and useful procedure in the treatment of catatonic youngsters as reported in 59 patients (Consoli et al., 2010).

Social concerns and cost effectiveness. Socially, ECT was more acceptable among treatment resistant cases and postpartum reports due to its short term and quick resolving of depressive symptoms (Keltner& Boschini, 2009). Costly, ECT was less expensive in comparison to new psychotropic agents such as Zoloft or Prozac due to their selectivity but its adverse effects required additional therapy (Eitan & Lerer, 2006; Zimovetz, Wolowacz, Classi & Birt, 2012). Moreover, other psychotherapy required more sessions and combinations with other psychotropic drugs for achieving benefits while ECT achieved it as monotherapy (Zimovetz et al., 2012).

According to the policy of NCMH (2011) for ECT use, they considered the ECT as somatic therapy that nursing staff supported and participated in providing electroconvulsive therapy, in addition to maintaining the patient's safety and rights as critical to the somatic therapies; the patient's medical record contained data on these treatments. So, the current author'a position statement will be shaped and adopted according to this policy and procedures.

Opponent Studies

Effectiveness. In contrast, among 28 participants in randomized control trials for fa our week period, Isoflurane as anesthesia agent of 10 sessions had an antidepressant effect approaching ECT with less adverse neuro-cognitive effects in comparison to the ECT group with eight to twelve sessions. The last were complicated with decline of memory and daily activities in 90% (Weeks et al., 2013). Moreover, in a retrospective descriptive study of 27 participants chart review for three years under continuous treatment of ECT as mono-therapy, the re-hospitalization rate was 43% in the first 6 months and increased to 58% within two years due to relapse of symptoms (Nordenskjöld, Knorring& Engström, 2011).

Additionally, a case report study, disagreed with electroconvulsive therapy because ineffective assessment and evaluation presented ECT induced mania as electrical effect of therapy which added more bulk in the treatment strategy (Saatcioglu & Guduk, 2009). Moreover, relapse rate was common after ECT in 50% within 6 months, which was treated effectively with antidepressants such as venlafaxine to prolong the remission period (Prudic et al., 2013). In addition, ECT adverse effects were uncontrollable in many patients, such as memory loss, seizure and severe headache (Nordenskjöld et al., 2011). Magnetic Seizure Therapy, MST, which induced seizure to brain regions with less voltage than ECT and less adverse effects for producing unpleasant seizure, additionally was more effective than ECT due to its locality and selectivity (Deng, Lisanby & Peterchev, 2011).

Side effects and contraindications. Most cases treated by ECT reported more than one side effect summarized as headache, nausea, vomiting, memory loss which can last for one month, scalp pain and in some cases fractures that added special concerns for considering ECT (Baghai& Möller, 2008).

Case report study of monozygotic twins who were treated with ECT reported prolonged apnea due to anesthesia procedure of ECT that increased suspicion about using ECT as effective therapy (Zavorotnyy & Zwanzger, 2011). Moreover, Electrocardiogram changes during ECT session indicated increasing pulmonary odema (Manne, Kasirye, Epperla & Garcia-Montilla, 2012). On the other hand, pre ECT procedure required full physical and mental assessment due to its precautions on multiple cases as increasing intracranial pressure or tumor, myocardial infarction, heart valve abnormalities, severe liver diseases, severe pulmonary diseases, intra cerebral vascular malformations, osteoporosis, esophageal hernia and others (Baghai& Möller, 2008).

Social and cost effective. Socially, the current adverse effects and media roles, decreased adherence to this therapy with increasing contact with other therapies (Payne& Prudic, 2009). Moreover, health care providers decreased ECT use as therapy due to its full preparation to procedure and long follow up post treatment (Martin & Elworthy, 2013). Costly, post ECT care for treating complications in severe cases was more expensive than usual psychotropic medications with psychotherapy (Read & Bentall, 2010). Moreover, family psycho education as preventive measurement for relapse prevention was more cost effective than recurrent ECT sessions as presented in a randomized control trial (Shimodera et al., 2012).

Summary

ECT is considered as effective therapy for many psychiatric illnesses, especially MDD and treatment resistant depression; on te other hand it increases enhancement in co morbid situations such as OCD, anorexia and epilepsy. Moreover, it is safe for the different medical disorders such as aortic stenosis or stroke. Additionally ECT users are more adherent than others to its feasibility and short term sessions and cost effectiveness.

On other hand, the ECT doesn't play an active role in preventing re-admissions and relapsing in different situations because it requires maintenance and follow up sessions to be useful therapy. Most common side effects are nausea, vomiting, headache, memory loss and localized pain and other side effects are due to special medical conditions. Moreover strict medical and physical assessment is required for avoiding unexpected outcomes.

Position Statement

The current author supports the use of Electroconvulsive Therapy among major depressive patients especially those who are treatment resistant to other treatment modalities to enhance psychiatric symptoms and illness relief. Moreover, it is strongly recommended for use among patients who have high suicidal, catatonic or assaultive behaviors. It must be used under systematic health care process. The current author recommends for the following practices:

- Nurses must prepare all equipment for ECT session considering first aid and septic considerations that include: oxygen supply, suction, face mask, items of monitor and electrocardiogram, cuff pressure and stethoscope, ECT items, normal saline alcohol swabs and items of anesthesia.

• Regarding session preparation:

1- ECT requires physician order with pretreatment orders

2- Patient must have a complete physical with all lab test results returned.

3- The physician obtains the informed consent and the primary nurse needs to reinforce the information given the patient and family when questions arise.

4- Patient is NPO at midnight the evening before a treatment. Prior to taking the patient to the treatment room, the nurse must check a patient for voiding and remove dentures, contact lenses, all jewellery and nail polish.

5- Check the patient's medical record is complete and including a signed permission; and gives the patient pretreatment medication as ordered.

• During session, primary nurse can stay with patient; nurse takes vital signs and monitors the ECG rhythm and the other one supports patient's jaw and extremities.

• After session, vital signs and patient's response must be monitored; return the patient to hospital room to recover with upside rails and feeding on full alert status; keep safe.

• The current author also recommends the following future directions:

o Enhancing family and patient's information about effectiveness and importance of ECT as somatic therapy.

o Considering patient's financial cover for assurance of complete sessions of ECT or other treatment modalities if possible.

o Encourage decision makers and stockholders to establish national and international agencies about ECT use and benefits to enhance social perceptions.

o Encourage authority holders to affect the media about ECT concerns to modify the negative social impression and stigma about ECT.

o Articulating standardized application of ECT among psychiatric patients to assure appropriate use and achieve planned outcomes.

o Activating the researchers' role in this field to enhance practices and skills of ECT procedure and changing that according to evidence based outcomes.

o Encouraging educational programs to enhance training and knowledge about ECT as therapy among nursing staff, physicians and other health care providers to ensure high quality of care in this field.

o Empowering the importance of interdisciplinary team as health care providers to assure increasing benefits and decreasing risks.

Summary and Conclusion

The purpose of this paper was to state a position about the using of ECT among MDD as somatic therapy. The current author supports the use of ECT as therapy for depressive patients especially those who are unresponsive to other modalities of treatment. It produces effective outcomes on decreasing relapses and enhancing of remission from disorders. It could be first line therapy in severe depressive cases with high lethality or catatonic cases and second line for those unresponsive to other psychotropic medications and psychotherapy.

Even though it has various side effects starting from localized pain ranging to memory loss and ending in death in some cases, it plays an active role in treating severe depressive episodes and co morbid disorders such as eating disorders, OCD, epilepsy and is safe on many medical conditions as stork , aortic stenosis and others. On other hand, high risk patients can be detected through holistic medical and physical assessment to avoid unpleasant outcomes, to achieve the major goal of psychiatric treatment, of health enhancement.

Acknowledgments

The current author offers special thanks for Professor Dr. Majd Mrayyan PhD, RN for her direct supervision and supporting for succession of this paper. Also the current author acknowledges support of other instructors on Hashemite University on nursing faculty especially on psychiatric and mental health department.

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IS THERE AN ASSOCIATION BETWEEN VITAMIN D AND DEPRESSION SYMPTOMS

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Abstract

Introduction: Background: Depression is considered one of the most abundant and serious psychological problems around the world. Moreover, many researches in different countries mentioned the relationship between depression and vitamin D level in those people who suffering from symptoms of depression. Furthermore, there are many studies interested in using non-pharmacological techniques tohelp clients with depression symptoms. Therefore, this literature review will evaluate is there association between Vitamin D levels and depression symptoms.

Methods: The studies in this literature review were chosen by electronic searches on Pub-med, CINAHL, and MEDLINE, for the years between 2008 and 2013. The selection criteria were to select research from different countries which was characterized by different climates and economic statuses focusing on association between depression symptoms and vitamin D.

Conclusion: There are many researchers that have mentioned an association between depression and vitamin D. In contrast there are numbers of researchers who didn't find the association between vitamin D and depression symptoms. The author's point of view there is association between depressive symptoms and vitamin D and there are many factors that contribute to this association such as the economic and environmental characteristics for these countries that are included in this paper.

Key words: Vitamin D, depression, vitamin D and depression relationship.

Introduction

Depression as mentioned in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) is mood dysregulation that is expressed by feelings of loss of interest, pleasure or depressed mood (DSM-5, 2013). Symptoms of depression are: weight loss, decrease or increase in appetite, insomnia or hypersomnia, Fatigue, restlessness, psychomotor agitation or retardation, worthlessness, Diminished ability to concentrate or think, suicidal ideation and a suicide attempt (DSM-5, 2013).

World Health Organization (WHO) in 2012 considered that, depression contributes significantly to the global burden of illness and affects all people around the world. About three hundred and fifty million people are affected by depression.

Depression can lead to suicide at its worst. About one million people lose their lives every year and more than twenty million people may attempt to finish his or her life (WHO, 2012). In the United States of America depression is one of the main reasons for disability (Ganji, Milone, M Cody, McCarty & Wang, 2010). Depression leads to loss of productivity and high medical bill costs (Noi-Okwei, 2010).

Total cost of depression in the United Kingdom is more than nine billion pound (O'Neill, 2008). After comparing depression with some chronic diseases in different parts of the world it is found that depression has the biggest impact on worsening health, and people who have chronic illness with depression had the worst health measures of all disease states (O'Neill, 2008). Depression leads to a direct impact on judgment, cognitive processes and decision making (Noi-Okwei, 2010).

Vitamin D (calciferol) comprises a group of seco-sterols. They are considered hormones because of their endocrine, paracrine, and autocrine activity (Utter, 2012). it was believed in the past that vitamin D is a vitamin fully, but in recent years it has been shows that it is also considered a hormone that can be activated by the body's exposure to sunlight (Ettinger & DeLuca, 1996). Vitamin D exists in a small number of foods, such as fatty fish, egg yolks, liver, fish-liver oils and mushrooms (Utter, 2012).

There are several types of vitamin D, vitamin D3 or cholecalciferol naturally produced in the skin by 7-dehydrocholesterol. Vitamin D2 or ergocalciferol a derived from plants; and is the preferred choice for vegetarians. Calcitriol is an active form of Vitamin D in the body, used in cases of End Stage Renal Disease (ESRD) for who are cannot convert vitamin D3 to calcitriol (Stone, 2013).

Vitamin D reduces the frequency of fractures and falls, reduces symptoms of influenza or colds, and helps to prevent cardiovascular disease. There are Benefits seen in depression, Crohn's disease, diabetes mellitus, pain, multiple sclerosis, and possibly autism (Kauffman, 2009).

The data show that depression increases in the winter time where vitamin D levels are low, and by discovery of vitamin D receptors (VDR) in the brain, this led to the set of theories about the relationship between vitamin D and depression (Kjaergaared et al., 2012). Vitamin D concentrations have been found to be low in patients with mood disorders and have been associated with cognitive function (Wilkins, Sheline, Roe, Birge, & Morris, 2006).

Actions of vitamin D in the brain are still not well understood. It may act to stimulate the nerve receptors in areas responsible for regulating behavior, such as cortex, cerebellum, and limbic system (Utter, 2012). In the study on distribution of the vitamin D receptor and 1a hydroxylase in human brain, it was found that the strongest receptor and enzyme was in the hypothalamus and in large neurons inside the substantia nigra (Eyles, Smith, Kinobe, Hewison, & McGrath, 2005).

There are many receptors for vitamin D in the brain, for this reason vitamin D has been linked with mental health problems and depression. Also Vitamin D plays an important role in brain development (Vitamin D Council, 2012). For patients who show the effectiveness of vitamin D as antidepressant, Vitamin D is one of the most cost-saving therapies and has less side effects in treatments in psychiatry (Young, 2009).

The aim of this study is to determine is there association between vitamin D and depression symptoms.

Literature Review

The aims of literature review are to examine the association between vitamin D and depression symptoms among depressed clients, and identify methods of application.

A survey study implemented in the United States of America in 2010, to assess the link between depression and vitamin D, was applied on 7970 people from different regions of the United States, with the sample of study between 19 - 39 years old. The result of study was, people with serum vitamin D were equal to or less than 50 nmol/L were significantly higher in having depression episodes than people with serum vitamin D equal to or more than 75 nmol/L. The conclusion of study was, depression is a higher rate between those with vitamin D deficiency when compared with people who have sufficient amount of vitamin D (Ganji, Milone, M Cody, McCarty, & Wang, 2010).

In a survey study in England to assess the relation between depression symptoms and vitamin D deficiency, data were analyzed from two thousand and seventy people who participated in the 2005 Health Survey for England. The finding is there is a relationship between late-life depression in northern latitudes and vitamin D deficiency (Stewart & Hirani, 2010).

A non clinical sample of young adults contain 630 University of Otago students, 236 men and 394 women were enrolled to assess the association between depression scores and vitamin D status. By using the Centre for Epidemiologic Studies Depression Scale (CES-D) on the first day, then taking notes by writing a diary on how the day was spent for participants for thirteen days, on the fourteenth day of the study a blood sdample was taken from the participants for 25 (OH) D analyses. The findings were depression scores in this young adult sample were greatly negatively correlated with Vitamin D status (Polak, Houghton, & Conner, 2013).

A study was done in England in 2010 to evaluate if lower levels of vitamin D were associated with depression in men in the European Community. The sample contained three thousand and three hundred and sixty-nine European men between middle-age to older men. Serum vitamin D and parathyroid hormone was measured by radioimmunoassay, and The Beck Depression Inventory-II (BDI-II) was used to screen for depression. Using multivariable logistic regression there was no relationship between parathyroid hormone and depression. Depression increased about 70% through vitamin D deficiency. Findings show the existence of an inverse relationship between vitamin D and depression (Lee et al., 2010).

A large population-based cohort study in Amsterdam, the Netherlands, was carried out to identify if there was a relationship between depression and vitamin D and parathyroid hormone levels. It was a population-based

cohort study design with one thousand two hundred eighty-two community residents between sixty-five and ninety-five years. Levels of vitamin D and PTH was assessed and depression was measured by using Center for Epidemiologic Studies- Depression scale, and measured explanatory factors such as physical activity, level of urbanization, potentially confounding factors such as body mass index, age, sex, number of chronic conditions, and others. Severity of depression increased by decreased vitamin D levels and with increased PTH levels; therefore, there was a relation between depression and vitamin D and PTH levels (Hoogendijk et al., 2008).

A study was carried out to determine if there is a relation between depression and vitamin D among a general cardiovascular population. The sample consisted of seven thousand, three hundred and fifty-eight patients with cardiovascular diseases, no prior depression diagnosis, age greater or equal to fifty years, then they measured vitamin D and were classified to four categories: optimal, normal, low, and very low. Findings were that there was an association and that association increased by factors such as, in the winter appeared larger, by age greater or equal to sixty-five, diabetes, and male sex were enhanced greater or equal to sixty-five (May et al., 2010).

A randomized trial study was conducted in the United State between 1995 to 2000, about the relationship between depression and vitamin D. The study included 36,282 postmenopausal women between 50 and 79 years old. It was to assess the effectiveness of daily supplementation with 400 IU of vitamin D3 combined and 1000 mg of calcium on depression in a randomized sample. Two years later by using the Burnham scale, the randomized women who received vitamin D and calcium after comparing with placebo group, appear on the continuation of the symptoms of depression. The findings show there is no relationship between 400 IU of vitamin D3 and calcium daily and depression in old women. The study recommends to conduct new studies containing a larger dose of vitamin D to determine its effectiveness in helping to prevent or treat depression (Bertone-Johnson et al., 2012).

A study was conducted in 2012 using a randomized control trial, to compare depression symptoms in participants with high and low levels of serum 25-hydroxyvitamin D (25(OH)D) and determine whether supplementation of vitamin D3 would enhance symptoms of depression in those with low vitamin D levels. Participants with low vitamin D levels were divided into two groups, placebo or 40 000 IU vitamin D3 per week for 6 months. Participants with high levels of vitamin D were used as nested controls. Depression was measured by using Hospital Anxiety and Depression Scale, Beck Depression Inventory, and Seasonal Pattern Assessment Scale and Montgomery-Asberg Depression Rating Scale. Results show the presence of two hundred and thirty participants with low levels of vitamin D, compared with one hundred and fourteen participants with high levels of vitamin D, which indicated that the number of participants with low levels of vitamin D ewere more depressed than participants with high levels of vitamin D. Conclusion is there is relation between depression symptoms and vitamin D, but there are no effects for vitamin D supplementation to improve depression symptoms (Kjærgaard et al., 2012).

In a study from Beijing and Shanghai, China, to evaluate the relation between depression symptoms and vitamin D by using cross-sectional study., in 2005, about three thousand two hundred and sixty-two people between the ages of fifty and seventy years from community residents participated. Depression was measured by Center for Epidemiological Studies of Depression Scale (CES-D) and depression was defined on the scale as sixteen or more; vitamin D was measured by radioimmunoassay. The finding was vitamin D isn't associated with depression symptoms among middle aged and elderly Chinese from either Beijing or Shanghai (Pan et al., 2009).

Conclusion

The author of this paper concludes that there are many numbers of research studies that supported the hypothesis of an association between vitamin D and depression symptoms in addition, to a number of other research studies that rejected this association.

In this research we found all of Ganji, Milone, M Cody, McCarty, and T Wang, 2010, Stewart and Hirani, 2010, Polak, Houghton, and Conner, 2013, May et al., 2010, Hoogendijk et al., 2008, and Lee et al., 2010 confirmed the existence of association between vitamin D and depression symptoms. In the other direction, Bertone-Johnson et al., 2012, Kjærgaard et al., 2012, and Pan et al., 2009, clarified the absence of association between depression and vitamin D. Most of the researchers in this research presented an association between vitamin D and depression and the possibility of the use of vitamin D in the treatment plan for depression symptoms.

Point of View

The author expected that there are associations between vitamin D and depression symptoms, due to the existence of a relationship in most of the research that examined the relationship of vitamin D with depression, in addition to the possibility of linking between seasonal depression and lack of exposure to sunlight with the phenomenon of vitamin D deficiency.

It can also take advantage of vitamin D in depression because it is characterized by the lack of side effects, and inexpensive in addition, to the possibility of using vitamin D without shame or stigma from social or others

Recommendations

We need other research to support the association between depression symptoms and vitamin D by using methods and designs more stronger such as experimental design and research from different regions in the world (different climates).

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Middle East Journal of Nursing
medi+WORLD International 2016