

Original Article

Determining Preoperative Constipation Risk for Patients Undergoing Total Knee Arthroplasty

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Abstract

Background: Problems regarding bowel elimination are quite common in patients undergoing surgery.

Aim: This research was made as a descriptive study to assess the risk of preoperative constipation for orthopedics patients.

Method: Research was conducted in Kastamonu State Hospital Orthopedics and Traumatology service, between March 2018 and September 2018. This study has been run with 91 patients who applied for the Orthopedics and Traumatology department at Kastamonu State Hospital and are suitable for the criteria of inclusion and also accepted to participate in. Data were collected via Patient Identification Form and Constipation Risk Assessment Scale and by using face to face interviews. **Results:** Data were analyzed by number, percentage, mean, standard deviation, the Kruskal-Wallis analysis of variance and using t test in independent groups. The 89.1% percent of the patients who participated in the study were in medium risk groups in terms of the development of constipation. Constipation Risk Assessment Scale average score was determined to be 13.1 ± 1.59 (medium risk).

Conclusion: It was determined that orthopedics and traumatology patients who participated in the study were at moderate risk for the development of constipation in the preoperative period.

Key Words: Constipation Risk, Nursing, Orthopedics and Traumatology.

Introduction

Incidence of musculoskeletal system problems are increasing due to extension of life time and correspondingly growing elder population, decreased mobilization and increased obesity. "Gonarthrosis" which is one of the most significant causes of disease and disability especially for individuals over 55 years old is a leading musculoskeletal problem. 'Gonarthrosis' is a common degenerative joint disease and characterized with joint pain, morning stiffness and bone crepitation (Tütün, 2010; Bijlsma et al., 2011; Nelson, 2014; Chen 2015, Medina 2016; Kaya, 2018). Pharmacological, non pharmacological and surgical treatments are preferred as treatment options for Gonarthrosis. During the treatment which is started with lifestyle changes it is expected to obtain some

relaxation by using opioids and narcotic analgesics, subsequently proceeded with Total knee arthroplasty (TKA) for patients not having any relaxation (Tuncer and colleag. 2012). TKA is creating an artificial joint by reconstructing the degenerated joint surface with special pieces produced from metal and polyethylene and designed for painless joint movement (King & Philips, 2016).

Constipation can frequently be observed and patients may have excretion problems due to increase of stress level, using analgesic medications associated with pain, nutritional alterations, decrease of liquid intake, decrease of mobility and change of toilet habits (Linari & others, 2011; Lee & others 2015; Trads & Pettersen, 2015; Trads et al., 2018). Therefore it is important determining patients under the risk

and planning appropriate nursing procedures for decreasing the constipation risk in post operative period. From the conducted studies it is observed that between 57.9% and 69.1 % of the patients experience constipation after major orthopedics surgery (Linari et al., 2011; Trads & Petersen, 2015; Ross-Adjie et al., 2015; Park and others, 2016). Constipation is defined as no defecation, hard feces and difficulty during defecation through three days in post operative period (Lili & Yu, 2013; Lin, 2016).

Assessment of constipation risk is important after almost every big surgical intervention like TKA. Constipation became an important problem for patients over the age of 55 with limited mobilization due to knee joint pain and for operations which require opioid/non opioid analgesic usage in pre operative and post operative period like TKA. Constipation is an important problem which leads both extension of hospitalization period by increasing the risk of complication and decreasing the quality of life for the patient and increasing health expenses and work loads of nurses (Trads et al., 2018). Constipation which is frequently observed in post operative period at orthopedics and traumatology clinics is an important complication due to the negative effects on quality of life by leading social, economical, hygienic and emotional pressure over the patients and also it may cause intestinal obstruction and related operations when it is not treated. (Richmond & Wright 2005; Kyle 2008; Hert et al., 2011; Kaya & Turan, 2011; Koca Kutlu et al., 2011; Şendir et al., 2011; Forootan et al., 2018). Therefore, risky patients should be determined and risk assessment should be done for constipation after TKA for preventing development of constipation (Leung & others, 2011). In this context, patients' recovery time, their accommodation to daily life will be effected positively and possible constipation incidence will be decreased or totally diminished.

Constipation risk in post operative period can be increased by not having regular intestinal habits prior to TKA, disturbance of physical movements, emotional depression, delaying defecation requirements, stress, chronic diseases and medication usage.

Constipation is a frequently observed complication in post TKA period but, it is also a preventable complication by determining the risk previously with planned and appropriate nursing

procedures. However, when the literature is evaluated, a limited number of studies are found to be intending to determine the constipation risk in those patients. Thus, this study is conducted for determining the constipation risk after TKA and bringing appropriate recommendations to orthopedics and traumatology nurses through the results.

The Aim of This Study: This study is conducted for determining pre operative risk status of the patients undergoing TKA by evaluating constipation risk with risk assessment scale.

Methods

Type of the Research: This is a complementary type study.

Place and Time of the Study: This study is conducted in Kastamonu Public Hospital Orthopedics and Traumatology clinic. Patients undergone total knee arthroplasty in between 2018 March and 2018 September are included in this study. Orthopedics clinic is consist of 11 patient rooms, one intervention and one nurse room. The clinic has 17 beds and totally seven nurses one of them is being responsible, nurses are on duty in clinics between 08.00-16.00 and 16.00-08.00.

Population and Sample of the Study: Population of the study includes patients undergone TKA between 12.03.2018-28.09.2018 in Kastamonu Public Hospital Orthopedics and Travmatology clinic. Sample of the study consist of 91 patients who met the including criteria and approved that they are included in the study.

Including criteria: Consist of patients who are volunteer for including this study, over the age of 18, undergoing TKA the first time in orthopedics and traumatology clinic, open to communication and collaboration, not having sensual loss like visual, auditory, conscious and can answer the questions and not having any disease (dementia, psychological disorders etc.) that can effect the patients decision making.

Data Collection Methods

Patient Identification Form: Patient identification form is prepared by the researcher and based on the literature (Turan, 2016; Abbot et al., 2014; Kassolik, 2015; Shin et al., 2015; Seyyedrassoli et al., 2016). The form consists of 12 questions asking about identification features of the patient (age, gender, height, weight, body mass index, marital status, educational status, working status, having chronic disease, regularly medications usage, toilet type inside his/her

house). Patient Identification form is filled by the researcher by talking face to face.

Constipation Risk Assessment Scale (CRAS): ‘Constipation Risk Assessment Scale’ was developed by Richmond and Wright in 2005. Validity and reliability of the scale in Turkish is provided by Koca Kutlu, Yılmaz Çeçen and Eser with 245 adult patients having treatment in Celal Bayar University Hospital surgery clinic (Koca Kutlu et al., 2011). While Cronbach’s Alpha value is found 0,50 in the original study. ‘Constipation Risk Assessment Scale’ is consist of four parts including lifestyle, hospital conditions, physiologic and psychologic condition, medications which are increasing constipation risk. At the end of every part, total score of every part takes place and constipation risk group is determined according to the total result. In the Constipation Risk Assessment Scale, between 1-10 point is considered as low risk, 11-15 point as moderate risk, 16 points and higher is considered as high risk (Koca Kutlu et al., 2011).

Practicing the Study: Data are collected between March-September when the researcher is randomly in the clinic for collecting data.

Primarily, the patients meeting the including criteria and being in the pre operation period are informed about the study. The forms of patients who are volunteer for including the study are filled by the researcher by face to face meeting method. Data collecting procedure took approximately 10-15 min. for each patient.

Assessment of the Data: Obtained data are analyzed with SPSS 22 packet program in this study. Data are analyzed by using number, percentage, mean, standard deviation.

Ethical Aspect of the Study: For evaluating ethical aspect of the study, applied to Kastamonu University Noninvasive Clinical Researches Ethical Committee and received written consent (approval number: 21.02.2018/6). Also written consent is obtained from Kastamonu Public Hospital where the research is conducted. For providing volunteer participation of the patients, the aim, method of the study and volunteer based participation are explained by the researcher with written and verbally. Patients who are voluntarily accepted including to the study are given informed consent form consisting the aim and duration of the study and their written consents are received.

Results

Table 1. Identification Features of the Patients and Their Constipation Risk Status

Identification Features	n	%
Gender		
Female	83	(%91.2)
Male	8	(%8.8)
Marital Status		
Single	2	(%2.2)
Married	89	(%97.8)
Educational Status		
Illiterate	23	(%25.3)
Literate	35	(%38.5)
Primary School	31	(%34.1)
Secondary School	1	(%1.1)
High School	1	(%1.1)
Employment Status		
Working	1	(%1.1)
Not working	90	(%98.9)
Status of Medical Condition that Increases the Risk of Constipation*		
Have	46	(%50.5)
Don't have	45	(%49.5)
Status of Using Medication that Increases the Risk of Constipation**		
Present	73	(%80.2)

Absent		18 (% 19.8)
Age	$\bar{x} \pm SD$ (Min-Max)	65.22 \pm 7.81 (48 - 85)
BMI	$\bar{x} \pm SD$ (Min-Max)	32.05 \pm 4.7 (21.5 - 44)

Disease that increase the risk of constipation for the patients are vascular system and endocrine system diseases like 'hypertension' and 'diabetes mellitus' . * Medications that increase the constipation risk of the patients include 'calcium canal blockers' and 'non opioid analgesics'.

Table 1 consist of distribution of the patients according to their identification features. Among the patients included in the study, 91.2 % are female, 8.8 % are male. 97.8 % of the patients are married, 38.5 / are literate, 98.9 % not working. 46 % of the patients have disease which increases the risk of constipation, 73 % are using medication which increases the risk of constipation. It is detected that the mean age of the patients who are included in the study is 65.22 \pm 7.81, body mass index is 32.05 \pm 4.7. It is determined that 80.2 % of the patients are using medications leading constipation, 50.5 % of the patients have disease which increases the risk of constipation.

Levels of Risk Constipation	N	%	Mean	SD
Low Risk for Constipation (10 points)	-	-	-	-
Moderate Risk for Constipation (11-15 points)	81	%89.1	13.1	1.59
High Risk for Constipation (16 points and above)	10	%10.9	-	

Table 2. Levels of Risk Constipation of Patients According to CRAS

When the patients' levels of risk constipation of patients according to CRAS is evaluated; it is detected that 89.1% of the patients (n:81) are in the moderate risk group, 10.9 % (n:85) are in the low risk group (Table 2). Not included in the tables, it is observed from the advanced analyses that there is no relation between the gender, age, marital status, educational status, body mass index, working status, disease which increases the risk of constipation, medication usage which increases the risk of constipation and constipation risk ($p > 0.05$).

Discussion

The aim of this study is to determine the pre operative constipation risk for the patients undergoing total knee arthroplasty. Findings obtained from the study are discussed below. It is determined that, patients who are included in this study and undergone TKA (gender, marital status, educational status, working status, age, body mass

index, disease and medication usage which increases constipation risk) have homogenous distribution and statistically suitable for comparison ($p > 0.05$) (SeeSchedule 4.1). This situation is important in terms of comparability of groups.

It is determined that patients who are included in this study and undergone TKA (gender, marital status, educational status, working status, age, body mass index, disease and medication usage which increases constipation risk) have homogenous distribution and statistically suitable for comparison ($p > 0.05$) (Table 1). This situation is important in terms of comparability of groups.

TKA is one of the major operations and may lead many post operative complications. Constipation is among those complications (Ross-Adjie and others, 2015). Patients' constipation can be prevented by nurses who can make planning and conducting care accompanied by evidence -based procedures (Lamas

and others, 2009; Wong and others, 2015). Using the constipation risk assessment scale for prevention of constipation, decreases the incidence of constipation for patients. It is detected that patients who undergone TKA and included in this study have moderate level (13.1 ± 1.59) constipation risk as a result of pre operative constipation risk assessment. From this point of view, it is considered that most of the patients have constipation risk due to decreased mobility, insufficient consumption of fiber and bran products, insufficient liquid intake, presence of chronic diseases like hypertension and diabetes mellitus which increase the constipation risk, using opioid / non opioid medications in pre operative period. Similar to our study, in Şendir and colleagues (2012) study conducted with orthopedics patients, it is detected that constipation risk is at moderate level (12.73 ± 4.75).

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