



Medical Surgical Nursing

KNOWLEDGE ON ANTI-COAGULATION THERAPY AMONG POST-OPERATIVE CARDIAC SURGERY PATIENTS IN SELECTED HOSPITALS, GUWAHATI, ASSAM, WITH A VIEW TO DEVELOP AN INFORMATION BOOKLET: A DESCRIPTIVE STUDY.

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ABSTRACT World Health Organization (WHO), 2021, stated that cardiovascular disease is the leading cause of death worldwide, responsible for 17.5 million deaths every year, whereas, India accounts for one-fifth of these deaths. Centres for Disease Control and Prevention (CDC), 2022, reported that about 659,000 people in the US die from heart disease each year. Blood thinners is a key part of management of patient undergoing cardiac surgery and one of the cornerstones to prevent complications after CABG and valvular heart surgery. The use of anticoagulants also contributes to the high risk of bleeding if not managed appropriately. Therefore, improving patient knowledge may control or reduce complications & therefore reduce the burden on the health services. **Aim:** The aim of the study was to assess the knowledge on anti-coagulation therapy among post-operative cardiac surgery patients in selected hospitals, Guwahati, Assam. **Methods And Materials:** A non-experimental descriptive study was conducted to assess the knowledge on anti-coagulation therapy among post-operative cardiac surgery patients. Using non-probability purposive sampling technique, 108 post-operative cardiac surgery patients were taken. Knowledge was assessed using structured interview schedule. **Results:** It was found that majority i.e.53% of the post-operative cardiac surgery patients had inadequate knowledge, 47% had moderately adequate knowledge and none of them had adequate knowledge. There was significant association of knowledge with selected demographic variables like gender, educational qualification, occupation, duration of taking ACT pre-operatively, source of information, family history of taking ACT. **Conclusion:** From this study, it was concluded that post-operative cardiac surgery patients had inadequate knowledge regarding anti-coagulation therapy. It is important to have adequate knowledge regarding ACT use to prevent or reduce complications. An information booklet was provided in order to strengthened their body of knowledge. This study gave the area to improve the knowledge on anticoagulation therapy among post operative cardiac surgery patients.

KEYWORDS : Knowledge, anticoagulation therapy (ACT), post-operative cardiac surgery patients.

INTRODUCTION

Cardiovascular disease is the leading cause of death worldwide, responsible for 17.5 million deaths every year, representing 32% of all global deaths, whereas, India accounts for one-fifth of these deaths especially in younger populations.¹ About 659,000 people in the United States die from heart disease each year that's 1 in every 4 deaths. Out of this, CAD claims 360,900 lives and the heart valve disease claims 288,348 lives worldwide.² Over 500,000 open heart surgeries perform worldwide every year, where, India alone performs over 60,000 open heart surgeries yearly.³

Blood thinners is a key part of management of patient undergoing cardiac surgery and one of the cornerstones to prevent complications after CABG and valvular heart surgery. Blood thinners after CABG surgery decreases the incidence of bypass graft failures and protect against recurrent ischaemic events in off-pump surgical strategies or after coronary endarterectomy.

Blood thinners are recommended after a mechanical valve replacement for two reasons. Firstly, human-made valves are made of carbon and titanium, and blood may have a propensity to "stick" to the artificial valve. That can cause the valve to clog and valve failure. Secondly, an artificial valve can create "turbulence" in the blood flowing through the heart, this creates another opportunity for blood clots to form.⁴

The use of anticoagulants is life-saving, but these agents also cause adverse side effects if not managed appropriately. The most significant and common adverse effect associated with anticoagulant are increased risk of bleeding. Improving patient knowledge may control or reduce complications & therefore reduce the burden on the health services.

OBJECTIVES OF THE STUDY

1. To assess the knowledge on anti-coagulation therapy among post operative cardiac surgery patients.
2. To find out the association of knowledge on anticoagulation therapy among post operative cardiac surgery patients with demographic variables.
3. To develop and validate an information booklet on anti-coagulation therapy.

REVIEW OF LITERATURE

Section I: Literature related to prevalence of cardiac surgery.

koirala Bhagawan, Amin Farzana, Rehman Somaiya, Hosain Nazmul (2019), conducted a cross sectional study on the status of cardiac surgery in the South Asian countries around India. The study finding showed that Bangladesh, Nepal, Pakistan and Sri Lanka perform around 38,000 cardiac operations a year. As per the study India performs more than 1,50,000 cardiac surgeries in a year. USA perform around 7,00,000 numbers of surgeries.⁵

Section II: Literature related to adverse effect due to non-compliance of anticoagulation therapy.

Waqas Shuaib, Hira Iftikhar, Richard Alweis, Hassan Shahid (2017), conducted a descriptive study on Warfarin Therapy: survey of patient's knowledge of their drug regimen, Pakistan. Out of 200 patients, 56% were unaware of any potential drug interactions, 58% were unaware of any adverse effects, 27% had experienced adverse effects, 12% had been hospitalised because of adverse effects (33% of which were due to bleeding). The study findings depict that patient's knowledge on warfarin therapy was low.⁶

Section C: Literature related to knowledge regarding anti-coagulation therapy among cardiac patients.

Devi Naorem Jiteswori (2019), conducted a non-experimental descriptive study to assess the knowledge regarding anticoagulation therapy among patients attending cardiac clinics of Pune city. Out of 200 cardiac patients, 70% of the cardiac patients had average knowledge, 10% had good knowledge and 20% of them had poor knowledge regarding anticoagulation therapy. The study result depicts that there is great need for improving the knowledge among the patients.⁷

RESEARCH METHODOLOGY

Research Approach: Quantitative research approach

Research Design: Descriptive research design

Research Variable: Knowledge

Demographic Variable: Age, gender, educational qualification, occupation, type of surgery undergone, duration of taking ACT pre-operatively, duration of taking ACT post-operatively, any previous information received on ACT, the source of information, family history of taking ACT.

Setting of the study: Selected hospitals, Guwahati, Assam

Population: Post-operative cardiac surgery patients

Target Population: Post-operative cardiac surgery patients with ACT, who had undergone CABG and heart valve surgery admitted in CTVS ICU & visited OPD for check-up after surgery.

Accessible Population: Post-operative cardiac surgery patients with ACT, who had undergone CABG and heart valve surgery admitted in CTVS ICU & visited OPD for check-up after surgery of selected hospitals, Guwahati, Assam

Sample: Post-operative cardiac surgery patients with ACT, who had undergone CABG and heart valve surgery admitted in CTVS ICU & visited OPD for check-up after surgery of selected hospitals, Guwahati, Assam, and who fulfilled the inclusion criteria.

Sample size: 108

Inclusion Criteria: Cardiac patients who were -
 a. willing to provide written informed consent.
 b. present on the day of the study.

Exclusive Criteria: Cardiac patients who were-
 a. haemodynamically unstable.

Tools And Technique: Structured interview schedule to assess the level of knowledge and the technique was interview method.

Scoring key: Structured interview schedule on anticoagulation therapy. The correct answer was given score of 1 (one) and wrong answer score 0 (zero). The total score was 30.

Category Of Knowledge:

Inadequate knowledge: <10 marks (<33%)
 Moderately adequate knowledge: 10-20 marks (33%-66%)
 Adequate knowledge: >20 marks (>66%)

Content Validity Of The Tool: The prepared tool (structured interview schedule and information booklet) along with the problem statement and objectives was submitted to 4 (four) nursing experts in the field of medical surgical nursing, 2 (two) medical experts in the field of cardiovascular surgery, 1 (one) medicine expert in the field of pharmacology.

Reliability Of The Tool: The reliability of the tool was done by using Split half method for structured interview schedule. It was revealed that the tool was reliable as reliability of the interview schedule was 0.72.

Ethical Consideration:

- Ethical permission to proceed with the study was taken from INS Trust Ethical Committee (GNRC Complex), Dispur, Guwahati, Assam.
- Permission was obtained from concerned authorities of selected hospitals (Health City Hospital, Hayat Hospital, Ayursundra Superspecialty Hospital) to carry out the study.
- Nature of the study and the purpose was explained to the selected samples and written informed consent was obtained.
- The subject were assured of anonymity and confidentiality of the data obtained.

Pilot Study: The pilot study was conducted from 30th November to 6th December, 2021. 14 samples were selected using purposive sampling technique and the study was found to be feasible.

Main Study: 17th January to 4th February, 2022.

RESULTS

Table 1: Frequency And Percentage Distribution Of Demographic

Variables Of Post Operative Cardiac Surgery Patients. N = 108

Demographic Variables	Frequency (f)	Percentage (%)
Age in years		
≤25	0	0%
26 - 40 years	3	3%
41- 60 years	42	39%
≥61	63	58%
Gender		
Male	66	61%
Female	42	39%
Transgender	0	0%
Educational qualification		
No formal education	4	4%
Primary school	33	30%
High school	26	24%
Higher secondary school	28	26%
Graduates and above	17	16%
Occupation		
Public sector	31	29%
Private sector	6	5%
Business / Self employed	42	39%
Unemployed	0	0%
Homemaker	29	27%
Any other	0	0%
Type of surgery undergone		
CABG	82	76%
Heart valve surgery	26	24%
Duration of taking anticoagulation therapy pre-operatively		
<1 month	7	6%
1 to 3 months	6	6%
4 to 7 months	41	38%
>7 months	54	50%
Duration of taking anticoagulation therapy post-operatively		
<1 month	44	41%
1 to 3 months	32	30%
4 to 7 months	25	23%
>7 months	7	6%
Any previous information received on anticoagulation therapy?		
Yes	25	23%
No	83	77%
If yes, the source of information		
Health care providers	21	84%
Mass media	4	16%
Relatives	0	0%
Friends	0	0%
Family history of taking anticoagulation therapy		
Yes	6	6%
No	102	94%

Table II: Frequency And Percentage Distribution Of Post-operative Cardiac Surgery Patients According To Their Level Of Knowledge. n=108

Category Of Knowledge	Frequency (f)	Percentage %	Mean	SD	Range Of Score	Total Score
Inadequate (<33%) (Marks <10)	57	53%	9.28	2.64	3-18	30
Moderate (33-66%) (Marks 10-20)	51	47%				
Adequate (>66%) (Marks >20)	-	-				

The table II depicted that out of 108 respondents, majority i.e.57(53%) had inadequate knowledge and 51(47%) had moderately adequate knowledge and none of the respondent had adequate knowledge on anti-coagulation therapy. Showing mean 9.28, SD 2.64, range of score 3-18, total score 30.

Table III: Association Of Knowledge On Anti-coagulation Therapy Among Post-operative Cardiac Surgery Patients With Their Demographic Variables.

Demographic Variables	Chi Square Vale	df	p value	Remarks
Age	5.748	2	0.056	NS at p>0.05
Gender	4.173	1	0.041	S* at p<0.05
Educational qualifications	17.656	4	0.001	S*** at p<0.001
Occupations	42.088	3	0.001	S*** at p<0.001
Type of surgery undergone	0.016	1	0.900	NS at p>0.05
Duration of taking ACT pre-operatively	14.985	3	0.002	S** at p<0.01
Duration of taking ACT post-operatively	0.795	3	0.851	NS at p>0.05
Any previous information received on ACT	0.681	1	0.409	NS at p>0.05
The source of information	7.559	2	0.023	S* at p<0.05
Family history of taking ACT	7.100	1	0.008	S** at p<0.01

***p<0.001, **p<0.01, *p<0.05, S – Significant, N.S – Not Significant, df - Degree of Freedom.

The table III shows that there was a significant association between the knowledge with the selected demographic variables like gender (p=0.041), educational qualification (p=0.001), occupation (p=0.0001), duration of taking ACT pre-operatively (p=0.002), source of information (p=0.023), family history of taking ACT (p=0.008).

DISCUSSION

The finding of the study revealed that out of 108 respondents, majority i.e.57(53%) had inadequate knowledge, 51(47%) had moderate knowledge regarding anti-coagulation therapy. The result of the present study was in contrast with the study conducted by Tamrat Assefa, Teferi Gedif Fenta, Bekele Alemayehu (2014), a cross sectional study on evaluation of patients' knowledge on warfarin therapy among outpatients receiving warfarin at Tikur Anbessa Specialized Hospital, Ethiopia. Out of 130 patients, majority of patients (76.9%) had moderate knowledge on warfarin therapy. The mean score of patients on correct response was 11.8 ± 2.5 (59.3% \pm 12.8%).⁸

The result of the study also revealed that there was a significant association between the knowledge with the selected demographic variables like gender (p=0.041), educational qualification (p=0.001), occupation (p=0.0001), duration of taking ACT pre-operatively (p=0.002), source of information (p=0.023), family history of taking ACT (p=0.008). The present study was supported by Jinhua Zhang, Hua Cao, Tingting Wu, Wenjun Chen, Jingnan Fu, Xiaotong Xia et. al. (2020), conducted a prospective and cross-sectional study at Fujian Medical University Union Hospital, China, on the effect of warfarin knowledge on anticoagulation control among patients with heart valve replacement. A total 383 patients were included. There were significant correlations between total questionnaire score and time in therapeutic range ($\rho = 0.539$, $P < 0.001$), or percentage of international normalized ratio measurements within range ($\rho = 0.416$, $P < 0.001$). There were significant correlations between patients' educational level and total questionnaire score ($\rho = 0.357$, $P = 0.001$). No significant correlations were found between income or living area and total questionnaire score ($\rho = 0.110$, $P = 0.435$; $\rho = 0.161$, $P = 0.149$). Study result depict that patient knowledge level of anticoagulation therapy affects anticoagulation control. Education for patients new to warfarin is recommended for better INR control.⁹

CONCLUSION

Out of 108 post-operative cardiac surgery patients, majority i.e., 57 (53%) had inadequate knowledge, 51 (47%) had moderately adequate knowledge and none of them had adequate knowledge. The investigator provided an information booklet on anti-coagulation therapy to the post-operative cardiac surgery patients for the purpose of strengthening their knowledge. As, majority of the patient were having inadequate knowledge thus, this study gave the area to improve the knowledge on anticoagulation therapy among post operative cardiac surgery patients.

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