Assessment of Knowledge Regarding Oral Anticoagulation Therapy (OAT) among Stroke Survivors

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Abstract

There has been a dramatic increase in the number of patients undergoing long term oral anticoagulation therapy (OAT) with warfarin in recent years. Successful anticoagulation treatment is dependent on the patient's knowledge of OAT. The present study was undertaken to assess the knowledge regarding OAT among stroke survivors and to determine the association between knowledge and selected socio-personal and clinical variables. The study revealed that only 5 percent of sample had good knowledge and the knowledge level was more among males and those who had previous exposure to lecture class/information pamphlet regarding OAT. Patients had poor knowledge in the area of dietary interaction of warfarin followed by precautions to be taken while on OAT and signs of side effects of OAT.

Stroke is a global health problem and an emerging epidemic in India (Sridharan et al, 2009). Globally, stroke is the second leading cause of death above the age of 60 years (WHF, 2016). An estimated 20 percent of all ischaemic strokes are a result of cardiogenic embolism, which can occur because of a variety of cardiac conditions, such as atrial fibrillation (AF), rheumatic heart disease, valvular heart disease etc. (Goldstein et al, 2006). Patients who have experienced stroke should undergo medical management for secondary prevention.

Oral anticoagulant treatment is recommended for stroke prevention in individuals with atrial fibrillation (Furie et al, 2011). Treatment regimens for preventing thromboembolism in AF patients range from vitamin K antagonists such as Warfarin or coumadins, antiplatelet drugs like aspirin or clopidogrel, to newly developed orally available antithrombotics like the direct thrombin inhibitor dabigatran, or the factor Xa-inhibitor rivaroxaban (Maegdefessel et al, 2010). For most patients with a stroke or transient ischaemic attack (TIA) in the setting of AF, it is reasonable to initiate oral anticoagulation within 14 days after the onset of neurological symptoms (Kernan et al, 2014). The most commonly used anticoagulants include Warfarin (caumadin), heparin and enoxaparin (NINDS, 2015). For over 50 years, warfarin has been the drug of choice in preventing AF-related strokes (Hinojar et al, 2015).

A global increase in the number of patients requiring OAT is expected over the next decades (Rich, 2009). If patients discontinue anti-coagulation therapy, it leads to major complications such as stroke, thromboembolism, cardiovascular complications and sudden cardiac death. At the same time, regular anticoagulation therapy can cause bleeding also. Anticoagulation is a high-risk treatment, which commonly leads to adverse drug events due to the complexity of dosing these medications, monitoring their effects, and ensuring patient compliance with outpatient therapy (Ansell et al, 2004). Interactions with other drugs, dietary intake, poor adherence with medication and deficiency in patient knowledge are factors associated with non-therapeutic treatment outcomes. Therefore, it is pertinent to assess the patients' knowledge about OAT (Yahaya et al, 2009).

Objectives

This study sought to:

1. Assess the knowledge regarding oral anticoagulation therapy (OAT) among stroke survivors attending stroke clinic in SCTIMST, Thiruvananthapuram.
2. Determine the association between knowledge and selected socio-personal variables.

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Review of Literature

The awareness of anticoagulation-related risk of bleedings was found lowest in patients without schooling (38.5%) and highest in those with college and university education (57%) by Madrid et al (2016). In this European study among 1147 patients with atrial fibrillation, the authors also reported that the patients with college education had less frequent deviations from their target international normalised ratio (INR) compared with those without schooling. The education level and patients' knowledge had a direct influence on the global management of the anticoagulation.

In a cross-sectional study to assess compliance with and awareness about OAT among 162 Saudi patients, and their willingness to use the point-of-care (POC) - INR testing device for self-monitoring, Al-Omair et al, (2016) reported poor knowledge about OAT and medium adherence to drug therapy. Majority were eager to make use of the POC-INR device. Nevertheless, the authors recommended an education programme to help patients in improving their medication control and reducing clinical visits.

Alphonsa et al (2015) conducted a descriptive cross-sectional study to assess the knowledge regarding OAT among 240 patients with stroke and those at high risk of thromboembolic events. Half of the patients were having poor knowledge score (<50%), 36.7 percent of them had average knowledge score (50%-70%), and only 13.3 percent of patients had a good knowledge score (>70%). The mean percentage knowledge scores on individual components of assessment showed the lowest score for dietary interactions (25%) followed by adverse effects (40%), drug interactions (40%), PT/INR monitoring (46%), and basic drug information (62%). Patient's knowledge about OAT was suboptimal. The findings support the need for educational interventions to improve the knowledge regarding OAT and, thereby, achieve an appropriate and safe secondary prevention of stroke.

Joshua & Kakkar (2015) found an overall poor knowledge status among 101 patients on oral anticoagulant therapy and less than one fifths of the patients (17.8%) only had adequate OAT knowledge.

Materials and Methods

Setting: This descriptive survey was conducted in the stroke clinic of a tertiary hospital in Kerala, India. This institute of national importance has 253 bed tertiary care of cardiovascular and neurological diseases and a 7-bedded comprehensive stroke care unit. More than 2250 patients got admitted in the comprehensive stroke care unit in the past six years. The unit receives an average of 35-40 patients in a month. Among these, six to nine patients are having cardio-embolic stroke; 60 to 75 patients attend the stroke clinic, which is run on every Friday. Out of this, 4-5 patients are on OAT. Some stroke survivors are attending the stroke clinic for more than 8 years. This shows the intensity and severity of stroke incidence in the population.

Sample: Patients who had cardio embolic stroke and presently on OAT attending the stroke clinic were purposively selected during July 2016 to October 2016. Those below 18 years having cognitive impairment or those who did not know to read and write Malayalam were not included in the study.

Data collection: The data was collected from 22 July 2016 to 14 October 2016. Formal permission from the authorities and informed consent from the patients were obtained. A self-structured and verified questionnaire was used for data collection, which consisted of three parts; demographic and clinical data to obtain information about the participant's socioeconomic characteristics and medical treatment respectively, and a questionnaire to assess knowledge on OAT. The knowledge assessment questionnaire consisted of 20 multiple choice questions under two subheadings.

The first section consisted of 15 questions related to oral anticoagulants. These questions assessed the patients' knowledge regarding the purpose of oral anticoagulants, its side effects and signs of side effects, precautions to be taken while on OAT, interaction of OAT with food and other medications. This section also included questions which assess what the patients do when they miss a dose, when they have to undergo any dental procedures, when they get injured and when they have to take other medications for any other reason. The second section included five questions related to PT/ INR (prothrombin time/ international normalised ratio) test. Questions in this section assessed the patients' knowledge regarding the purpose of PT/INR test, factors which affect PT/INR value, what happens when the PT/INR level goes above and below the expected range and the frequency of checking PT/ INR after its level come to the desirable range. A pilot study was done among four patients to find out the feasibility of the study.

Data analysis: Data were analysed using OpenEpi version 3.01. The results were expressed as number and percentages and comparison of groups was

Table 1: Distribution of sample according to total knowledge score

Knowledge score	Frequency	Percentage (%)
Good (75%-100%)	2	5
Average (50%-74%)	22	60
Poor (<50%)	13	35
Total	37	100

performed with the chi-square tests or Fisher-exact tests where appropriate. Probability value of 0.05 or less was the criteria used to measure statistical significance.

Results & Discussion

Thirty-seven stroke survivors on OAT attended stroke clinic were included. Their age ranged from 21 to 71 years with a mean (±SD) of 51.9 (±12.4). The assessment of knowledge regarding OAT showed that only 2 (5%) sample had good knowledge (75%-100%), 22 (60%) had average knowledge (50%-74%) and 13 (35%) had poor knowledge (<50%) (Table 1). Patients had poor knowledge in the area of dietary interaction followed by precautions to be taken while on OAT and signs of side effects of OAT. Knowledge ranged from six (30%) to 17 (85%).

The association between knowledge and selected socio-personal variables and clinical data revealed that there was a significant association between knowledge and gender (p=0.005), knowledge and duration of OAT (p = 0.03), knowledge and previous exposure to lecture class/information pamphlet regarding OAT (p = 0.03) (Table 2).

Table 2: Association between knowledge score and selected variables

Variables	Knowledge <60%	Knowledge ≥60%	Total	p-value
Age				
< 53 years	7 (39%)	11(61%)	18 (100%)	0.40
≥ 53 years	10 (53%)	9(47%)	19 (100%)	
Total	17 (46%)	20 (54%)	37 (100%)	
Gender				
Male	6 (27%)	16 (73%)	22 (100%)	0.005
Female	11 (73%)	4 (27%)	15 (100%)	
Total	17 (46%)	20 (54%)	37 (100%)	
Education				
< SSLC	9 (56%)	7 (44%)	16 (100%)	0.27
≥SSLC	8 (38%)	13 (62%)	21 (100%)	
Total	17 (46%)	20 (54%)	37 (100%)	
Duration of OAT				
< 3 years	7 (32%)	15 (68%)	22 (100%)	0.03
≥ 3 years	10 (67%)	5 (33%)	15 (100%)	
Total	17 (46%)	20 (54%)	37 (100%)	
Previous exposure to class regarding OAT				
Yes	0 (0%)	6 (100%)	6 (100%)	0.03
No	17 (55%)	14 (45%)	31 (100%)	
Total	17 (46%)	20 (54%)	37 (100%)	

The present study showed that the knowledge regarding OAT was more among males and those who had previous exposure to lecture class/information pamphlet and as the duration of OAT increased the knowledge decreased. There was no significant difference in the level of knowledge regarding OAT according to age or education.

Patients had poor knowledge in the area of dietary interaction (11%) followed by precautions to be taken while on OAT (19%), signs of side effects of OAT (19%), interference of alcohol intake with INR values (24%) and consumption of green-leafy vegetables while on OAT (30%). Similarly, a study conducted by Alphonsa et al (2015) in a tertiary care hospital in India showed that half of the patients were having poor knowledge score (<50%), 36.7 percent of them had average knowledge score (50%-70%), and 13.3 percent of patients had good knowledge score. The mean percentage knowledge scores on individual components of assessment showed the lowest score for dietary interactions (25%), followed by adverse effects (40%), drug interactions (40%), PT/INR monitoring (46%), and basic drug information (62%). Similar findings have been reported by Khudair et al (2010) who found the least level of knowledge was on warfarin drug interactions, effect of a missing dose and its management.

Majority of the stroke survivors had only average knowledge regarding OAT. However, all stroke survivors who had attended health education classes and/or read information pamphlet on OAT scored more than 60 percent. These findings support the need to have educational interventions for patients to improve their knowledge regarding OAT. Moreover, majority of stroke survivors who were on OAT for more than three years scored less than 60 percent, underscoring the importance of periodic health education.

Recommendations and Implications

Nursing Research: A similar study can be replicated on a large scale in different government and private hospitals to generalise the findings. A comparative study on knowledge, attitude and practice can be conducted among patients on prolonged OAT for different indications such as mechanical heart valve prosthesis, cardiac rhythm abnormalities and cardioembolic stroke.

Nursing administration: The nursing administration should develop and update health education pamphlets/protocols/videos for patients on OAT and

utilise them to give health education through nurse-led clinics / outpatient clinics.

Nursing Education: Specialty nursing students should follow evidence-based practices, utilise research findings to impart updated knowledge to their clients. Timely, appropriate health education and treatment can prevent many cardioembolic strokes especially in young clients.

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अक्षम व्यक्तियों के प्रति सकारात्मक रुख आवश्यक

कुछ व्यक्ति समाज की मुख्यधारा से अलग–थलग महज इसलिए पड़ जाते हैं चूंकि वे किसी अक्षमता से ग्रस्त हैं। समाज में अमूनन इन्हें बराबरी का दर्जा नहीं मिलता और वे सामान्य व्यक्तियों को सुलभ अनेक सुविधाओ से वंचित रहते हैं। इस सोच में बदलाव लाने की दृष्टि से प्रतिवर्ष 3 दिसंबर का दिन अंतर्राष्ट्रीय अक्षमता दिवस बतौर मनाया जाता है; इस वर्ष का थीम है, अक्षमताओं के साथ जीते व्यक्तियों का सशक्तीकरण और समान दर्जा देते हुए, वर्ष 2030 के एजेंडा के लक्ष्य के अनुकूल उनका मुख्यधारा में समावेश। दर असल किसी एक अक्षमता से अभिशप्त व्यक्ति की सोच–समझ अन्यों से कमतर नहीं होती तथा अवसर मिलने पर वह अपनी प्रतिभा का उपयोग करते हुए समाज में बेहतरीन योगदान दे सकता है। एजेंडा 2030 का लक्ष्य है कि कोई भी व्यक्ति पीछे नहीं छूटना चाहिए। अतः सभी के विकास के लिए उचित संस्थागत ढ़ाचे विकसित किए जाने आवश्यक हैं।