

## Role of Patient Education and Counseling in Acenocoumarol Management

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Rec date: January 08, 2016, Acc date: January 20, 2016, Pub date: January 27, 2016

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### Abstract

Thromboembolic disorders are very common across world, frequently a leading cause of death. Appropriate use of Anticoagulant plays an important role in management of prevention and treatment thromboembolic disorders like Deep vein thrombosis, Pulmonary embolism, Stroke prevention in atrial fibrillation, prosthetic heart valves etc.

Vitamin K antagonists, e.g., acenocoumerol or warfarin are frequently used as oral anticoagulants worldwide over 50 years in clinical practice. Anticoagulation management never complete with Five Cs i.e. complications, compliance, confidence, convenience and cost and success of anticoagulation management totally depends upon five Cs of anticoagulation. The association between patient knowledge and enhanced anticoagulation control is well documented.

Patient education in anticoagulation management as well as well-defined regular patient education programs leads to increase adherence to the therapy and definitely good compliance. Good compliance also develops confidence and reduces the complications because of anticoagulation therapy. Anticoagulation clinics will definitely have a role in anticoagulation management but in country like India they are very few. Self-monitoring device are available in India but because of cost factor and lack of awareness not getting utilised at patient level.

**Keywords:** Thromboembolic disorders; Anticoagulant; VKA; Acenocoumarol; Patient education

### Introduction

Thromboembolic disorders are very common across world, frequently a leading cause of death. Appropriate use of Anticoagulant plays an important role in management of prevention and treatment thromboembolic disorders [1].

The vitamin K antagonists (VKAs) have been the backbone of oral anticoagulant therapy for more 50 years. Their effectiveness has been established by well-designed clinical trials for the primary and secondary prevention of venous thromboembolism, for the prevention of systemic embolism in patients with prosthetic heart valves or atrial fibrillation, for the primary prevention of acute myocardial infarction in high-risk men, and for the prevention of stroke, recurrent infarction.

Vitamin K antagonists, e.g., acenocoumerol or warfarin are frequently used as oral anticoagulants in developed and developing countries like India. Acenocoumarol is a coumarin derivative with pharmacological features closer to an ideal oral anticoagulant [1].

In India, vitamin K antagonists like acenocoumarol and warfarin are preferred by physicians for oral anticoagulation. However, there are few unique issues in India when it comes to oral anticoagulant therapy [2].

- Different dietary habits in Indians when compared to western population, predisposes them to increased risk of warfarin-food interactions.
- Indians have the habit of taking over the counter medications such as non-steroidal anti-inflammatory drugs or alternative herbal

products for disorders varying from body aches to fever. These medications increase the oral anticoagulation action of vitamin K antagonists and increase bleeding. Concomitant use of antitubercular drugs can change the INR values and lead to under or overcoagulation

- During concurrent comorbid illnesses such as diarrhea, fever etc., patients usually tend to stop vitamin K antagonists and end up with a low INR or if administered antibiotics they present with high INR or bleeding.
- Lack of proper laboratories with standardized measurement of PT/INR is another major drawback that affects the monitoring of oral anticoagulation therapy in India

In India Acenocoumarol monograph is described in the Indian Pharmacopoeia and Regulatory authorities have approved acenocoumarol tablets ranging from 0.5 mg up to 6 mg for the prophylaxis and management of thromboembolic disorders [3].

Acenocoumarol is used to treat thromboembolic disorders with once day dosing by oral route. Acenocoumarol is unique, with its rapid onset and offset of action and well documented efficacy and safety.

Acenocoumarol has been shown to be superior to warfarin in maintaining INR stability within therapeutic range and efficacy1.

Anticoagulation management never completes with Five Cs i.e. complications, compliance, confidence, convenience and cost and success of anticoagulation management totally depends upon five Cs of anticoagulation [4].

The association between patient knowledge and enhanced anticoagulation control is well documented. Patient education in anticoagulation management as well as well-defined regular patient

education programs leads to increase adherence to the therapy and definitely good compliance.

Good compliance also develops confidence and reduces the complications because of anticoagulation therapy.

A good patient education program on anticoagulant not only involves patient but also caretaker or family members.

The program should address who, what, when, why, where and how of anticoagulation therapy in the language understood by patients and their family members.

Anticoagulation education programs should be carried out regularly for patients

#### **Content of Anticoagulation Education Program [4]**

It should be simple, easy to understand, should be in patient's regional language, cartoons should be included as far as possible.

Video films should be shown to patients on anticoagulation management which will include all aspects on anticoagulation management mention below.

Education sessions should be regular and can be taken at clinic, patient's bedside with booklets, audio tapes, CD or video tapes and DVDs.

Following equations should be address in any patient education booklet on anticoagulation management

What are VKAs? What is acenocoumarol?

Why do patients need it?

How they work?

Why monitoring with PT/INR is required?

What can change PT/INR?

What are side effects of VKAs like acenocoumarol?

Common medication interacting with acenocoumarol and changing PT/INR?

Common food which alter PT/INR when consumed with acenocoumarol?

What basic things patient should remember when he is taking VKA i.e. acenocoumarol?

If bleeding occurs what he should do?

Whom patient should contact if urgent consultation is required?

#### **Education approach [4,5]**

Doctors should discuss the implications of anticoagulation therapy with patient and their relatives on initiating anticoagulation therapy. Also should discuss pros and cons of therapy. At the end of discussion adequate time should be plan to answer questions raised by patient and relatives.

In next 2-3 days all required information should be provided to patient and relatives or caregiver and ensure all aspects of anticoagulation therapy are covered.

#### **Acenocoumarol Education Model Should be Discussed under Following Headings [4-6]**

##### **Introduced yourself**

Explain to patient and relative about the need of anticoagulation which you are going start for him. Explain that patient education plays a vital role and success and safety of this therapy depend on patient's management of the medication.

It is very essential that patients and their relatives must be aware about why patients are taking oral anticoagulants, how they should take it and what to do when they experience any side effect.

##### **Rationalization of acenocoumarol therapy**

Explain completely to patients and relative about acenocoumarol. Explain that acenocoumarol is an anticoagulant or blood thinner. It decreases formation of blood clots by thinning the blood. It is very commonly used since many years to prevent abnormal clotting and to prevent harmful blood clots forming.

Explain patient and relative why anticoagulant prescribe to him – because he or she experience leg clot (DVT), a lung clot (PE), an arrhythmia (atrial fibrillation) or had heart attack or had placement of mechanical heart valve.

##### **How to take acenocoumarol**

Explain him that dosage of acenocoumarol is determined by physician based on blood test like PT/INR. The success of the treatment depends upon the correct dosage of acenocoumarol and which differs from person to person and needs titration as per PT/INR values.

Patient should take VKA like acenocoumarol at 8 pm every night

Patient should remember the name and dosage of VKA like acenocoumarol to ensure that they take the correct dosage as prescribed.

##### **Missing a dose of VKA [4]**

Taking the VKA i.e. acenocoumarol at the same time each day (preferably in the evening) will make it less likely that will miss a dose. If patient realise that they had missed a dose within eight hours of usual timing, they should take it as soon as they remember. If more than eight hours have passed since usual timing, patient should skip the dose and wait till the next day. They must not double the dose. Patient should inform doctor about missed dose. If more than one dose missed he or she should contact doctor for his advice. Patient should always have at least a week's to ten days supply of tablets in hand.

##### **Possible side effects [5-7]**

Most common side effect is bleeding. Which is occurring because of blood being too thin? While patient on VKA like acenocoumarol, patient may tend to bleed or bruise more easily when injured. When patient on VKAs bleeding tends to occurs from minor injuries cut do not stop quickly.

Following signs may direct that patients' blood is too thin, in which case acenocoumarol dosage needs to be adjusted.

If the patients show any signs like gum bleeding, nosebleed, and blood in urine, dark black stool, heavy menstrual flow, easy bruising with no reason, dark urine they should inform their doctor as early as possible.

To reduce the risk of bleeding from accidental injuries patient should avoid rough sports or activities. Use a soft bristle toothbrush for dental care. Be careful while using sharp objects including scissors, razors and nail remover etc.

Patient must inform their doctor immediately if they experience prolonged bleeding or severe bruising, red colour or dark urine, black colour stool, bleeding from nose or pink sputum.

### **Drug interactions [5]**

Explain patient and their relative that many drugs, herbal preparations, over-the-counter medications can interact with acenocoumarol. Patient must always inform their doctor while starting any of such medications. Ideally they should not use such medication without doctor's opinion.

### **Food interactions [5]**

Please explain patient and their relatives that patient should consistence with diet, especially with dietary intake of vitamin k. variation in dietary intake may affect effectiveness of acenocoumarol therapy. Vitamin K commonly found in green leafy vegetables such as spinach, broccoli, green tea and cranberry juice also rich in vitamin k.

Patients do not have to abstain from any particular food. The fundamental is to maintain a steady diet and avoid any drastic change.

### **Monitoring with blood test PT/INR [4,5]**

Discuss patient and their relative regarding need of doing regular PT/INR monitoring. A patient response to VKA like acenocoumarol – that is, whether the blood is thin enough or too thin – is measured by a blood test called INR ( international normalised ration ). The goal is to keep INR within the range which is requiring for particular condition. If INR falls out of this range dosage adjustment is require for acenocoumarol. The blood tests must be more frequent at first, but once a suitable dose has been determined, the schedule blood tests will be less frequent.

At the end of patient education program please ensure that patient has understood all that has been explained. Follow up sessions may be required to emphasis of important aspect of anticoagulation management.

Video education programmes could be kept running in a corner of the waiting room. More novel methods of propagating anticoagulation education could include forming anticoagulant or acenocoumarol clubs or running regular seminars where anticoagulated patients can share their experience.

### **Role of anticoagulation clinics and monitoring of oral anticoagulant therapy [8]**

Safety and efficacy of antivitamin K antagonists primarily depends on strict laboratory and clinical control. Complications of oral anticoagulants are related to age, comorbidities, co-medications, out of range coagulation levels and poor therapeutic control.

Therefore, to ensure effectiveness and safety of antivitamin K anticoagulants, a careful clinical and laboratory monitoring and specialized care to manage emergencies, is crucial. This led to development of independent services called anticoagulation clinics (AC).

Anticoagulation clinics are services which provide specialized care to patients on anticoagulant treatment. These services provide diagnosis, treatment and prevention of thromboembolic diseases.

Four different management models are considered for treatment with antivitamin K antagonists; routine medical care (RMC), AC, patient self-testing (PST) and patient self-management (PSM). Several clinical studies have reported that anticoagulation management is very important to achieve good quality of treatment and AC is considered the best management model for antivitamin K antagonists

### **Goals of anticoagulation clinic [8]**

The aims of anticoagulation clinic include;

- Determination of the appropriate clinical indications for anticoagulant treatment
- Determination of the laboratory tests necessary to pharmacological monitoring
- Prescribing the anticoagulation regimen based on results of the laboratory tests
- Defining the time intervals for regular anticoagulation controls
- Assessment of the potential pharmacological interactions
- Taking appropriate care of patients undergoing surgical interventions
- Initiation of educational programs for patients and healthcare providers

### **Patient self-management of anticoagulation [9]**

With technological advances in INR measurement, improved anticoagulation management by point-of-care has been achieved. This allows for simple and easy self-assessment of INR by patients. Due to portability of the instrument, a patient can carry it wherever he/she travels. Standardization of the instrument has further minimized the inaccuracies associated with use of multiple reagents and laboratories.

Evidences from clinical studies have reported that these devices are accurate and precise and can be used for monitoring in both adults and children. These instruments are very helpful for patients who are on prolonged or indefinite anticoagulant therapy.

Several clinical trials have demonstrated the ability of patients to perform self-testing. In The Home INR (THINRS) trial, 3000 patients with atrial fibrillation were randomly assigned to perform self-testing or receive standard coagulation clinic management.

In the trial, 80% of patients were able to perform self-testing and dose management in this group was conducted by anticoagulation clinic. In the study, the self-management group had a markedly higher proportion of time in the therapeutic range and there was a higher level of patient satisfaction and quality of life. However, there were no significant differences noted between the two groups with respect to bleeding or thrombosis.

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