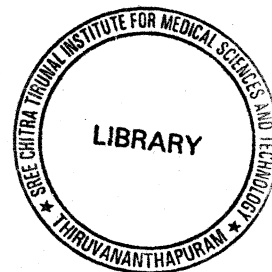


**A STUDY TO ASSESS THE KNOWLEDGE AND  
PRACTICE OF ANTICOAGULATION THERAPY  
AMONG PATIENTS ATTENDING FOLLOW-UP  
CLINIC AFTER PROSTHETIC VALVE SURGERY**

***PROJECT***

**ABIJA. V.S**



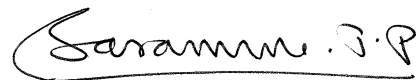
**SREE CHITRA THIRUNAL INSTITUTE FOR  
MEDICAL SCIENCE AND TECHNOLOGY**

**2005**

## **CERTIFICATE**

Certified that this study to Assess the knowledge and practice of anticoagulation therapy among patients attending followup clinic after prosthetic valve surgery in a bonafied work of Abija. V.S at the Sri Chitra Thirunal Institute for medical sciences and Technology submitted in partial fulfillment of the requirement for the Diploma in Cardiovascular & Thorasic Nursing from the Sri Chitra Tirunal Institute for medical science & Technology.

Date : 11/12/05



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TVM

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I, the investigator express sincere thanks to my family members and friends for their prayers and inspirations.

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**ABIJA V.S.**

## **CONTENTS**

<i>Sl.No.</i>	<i>Titles</i>	<i>Page Number</i>
1.	INTRODUCTION	1
	Back ground of the study	1
	Need and significance of the study	3
	Statement of the problem	5
	Definition of terms	5
	Objectives of the study	6
	Methodology	6
	Limitation	6
	Summary	7
2.	REVIEW OF RELATED LITERATURE	8
	Introduction	8
	Studies related to	
	(a) INR Self management permits low does anticoagulation.	9
	(b) Prosthetic valve thrombosis and effect of anticoagulation.	10
	(c) Anticoagulation during pregnancy.	11
3.	RESEARCH METHODOLOGY	18
	Introduction	19
	Research approach	20
	Research design	20
	Setting of the study	20
	Population	21

	Sample & Sampling Techniques	21
	Criteria for sample collection	21
	Development of Tools	22
	Description of Tools	24
	Pilot study	25
	Data Collection procedure	26
	Plan of analysis	27
	Summary	27
4.	ANALYSIS AND INTERPREATION	28
	I. Sample Characteristics	28
	II. a. Data on Patients knowledge about anticoagulation.	34
	b. Data on patients practice about anticoagulation.	35
	III. Data on comparing patients knowledge and practice.	36
5.	SUMMARY – CONCLUSION AND RECOMMENDATION	37
	Summary	37
	Implication	38
	Limitation	39
	Conclusion	39
	Recommendation	40
	BIBLIOGRAPHY	41
	Books	41
	Journals	42
	Thesis	43

#### APPENDICES

## LIST OF TABLE

<i>Sl. No.</i>		<i>Page No.</i>
1.	Distribution of patients among demographic variables.	30
2.	Data on patients knowledge and practice about anticoagulation therapy.	36

## LIST OF FIGURES

<i>Sl. No.</i>		<i>Page No.</i>
1.	Schematic Design of the study	29
2.	Distribution of patients among their age group	30
3.	Distribution of patients according to the sex.	31
4.	Distribution of patients according to the education status	32
5.	Distribution of patients according to the occupation status	33
6.	Data on patients knowledge about anticoagulation therapy	34
7.	Data on patients practices about anticoagulation therapy	35
8.	Data on comparing the knowledge and practice about anticoagulation therapy	36

## **INTRODUCTION**

The presence of artificial valve substitute a new disease state for the pre-existing valvular disease. Much of the mortality and morbidity in patients with the mechanical valves is related to the lifelong anticoagulation. Thromboembolic complications in 10-12% per year and bleeding in 2-6% per year have been reported, (By the study conducted by S.S.Anandaraja SS Kotharis, V.K. Bahl about oral anticoagulation Therapy for prosthetic valves in 1996 from Indian Heart Journal 2004). The potential for mortality and morbidity from a valvular prosthesis remains as long as the valve is in place.

### **BACKGROUND OF THE STUDY**

Approximately 10,000 heart valve prosthesis are inserted per year in India (From Annual: Thorasic surgical journal 1976). Evenafter the successful heart operation, the patients with prosthetic valve cannot be regard as healthy individuals but are a special group with special problems who need close medical attention for the rest of

their lives. They are susceptible to many unusual complications because of their implanted foreign body. Despite improvement in valve designs, and advances in the understanding of anticoagulation therapy, thromboembolism and hemorrhage continue to plague the lives of these patients. Thromboembolic complications in 10-12% per year and bleeding in 2-6% per year have been reported. It appears that such complications are even frequent in Indian patients than those reported in Indian Heart Journal 2004: 56 : 281-285. Lack of supporting infrastructure at primary level, long distances required to reach tertiary referral centres, over burdened tertiary care facilities dietary factors and other variable may account for the high rate of complications observed. There are specific complications related to prosthetic valves including valve thrombosis. Thrombosis of a heart valve can present with gradual cardiac decline, embolic phenomena, finally cardiogenic shock. To avoid this debilitating complication anticoagulation therapy started during the first post operative period. The dosage should be adjusted according to PT/INR value. For AVR- INR should be 2.5-3.5, MVR- INR should be 2.5 - 3.5, For AVR INR should be 2-3. Warfarin or dipyridamole remains the main stay of therapy for long term prevention and treatment of thromboembolism.

Our institute, Sree Chitra Thirunal Institute of Medical Sciences and Technology is a referral hospital of cardiology and neurology. There one valve case per day done, in recent years tissue valve is not used only prosthetic valve. Chitra valves, Star-Edward valve and Medtronic valve are mostly used valves in this Institute. After the prosthetic valve surgery, patient should be discharged on the 7<sup>th</sup> post operated period. First visit will be 3 weeks after surgery. Prosthetic follow up clinic should be conducted every Monday to Thursday from 8 am to 4 pm PT/INR lab test checked all the days except holiday.

#### **NEED AND IMPROTANCE OF THE STUDY**

The Potential for motility and morbidity from a valvular prosthesis remains as long as the valve is in place. The major type of morbidity associated with prosthetic valve are cardiac failure, thromboembolism, anticoagulant related hemorrhage and endocarditis. Since the last 6 months of 140 valve cases 20-30 are admitted in the NMICU e embolic stroke in SCTIMST ie. 14%-20%.

From this it was found that thromboembolism remains major complication. Prosthetic cardiac valve thromboembolic events can occur with any type of prosthesis but more often associated with mechanical valves embolization most often occurs to the cerebral circulation resulting in a cerebrovascular accident or transient ischemic attack but also occurs to the peripheral circulation resulting in ischemia or infarction of tissue distal to the embolus.

Warfarin remains the main stay of therapy for long term prevention and treatment of thromboembolism after prosthetic valve surgery. Warfarin is life saving medication and it had potentially fatal adverse effects. Its anticoagulant response, measured in terms of the international normalized ratio (INR), must be maintained within a defined therapeutic range for optimal effect. Warfarin has a narrow therapeutic index, and numerous factors affect its pharmacokinetics and pharmacodynamics, causing fluctuations in anticoagulant response. These factors include diet rich or deficient in Vit K, alcohol bringing drug interactions and alterations in disease state eg: congestive heart failure). It is known that fluctuating levels of anticoagulation below and above the therapeutic range are associated

with an increased risk of thromboembolic and bleeding complications respectively. Bleeding, particularly in the gastrointestinal tract, is the most common complication associated with warfarin therapy. Hematuria and soft tissue bleeding also occur. Therefore, regular monitoring of INR is critical to enhance the efficacy and safety of oral anticoagulation. Also, patients should be provided with educational counselling about the oral anticoagulation.

## **STATEMENT OF THE PROBLEM**

A study to assess the knowledge and practice of anticoagulation therapy among patients attending follow up clinics after prosthetic valve surgery, at Sree Chitra Tirunal Institute of Medical Science and Technology.

## **DEFINITION OF TERMS**

*Prosthetic valve surgery:* It is the surgery to replace innate diseased heart valve using a mechanical or artificial valve.

*Anticoagulation therapy:* It is the treatment to prevent blood clotting mechanism.

## **OBJECTIVES OF THE STUDY**

- To assess the knowledge among patients attending prosthetic valve follow up clinic.
- To evaluate the practice of patients attending prosthetic valve follow up clinic.

## **METHODOLOGY**

The survey approach method was used in this study 20 patients taken as sample, sample selected includes patients who are attending follow up clinic after prosthetic valve surgery. This study was to assess the knowledge and practice of anticoagulation therapy among these patients. After obtaining informed consent, a questionnaire was given to the patient. The validity of the tools are checked by the experts of SCTIMST. The duration of the study is August to October 2005.

## **LIMITATION**

(a) This study was limited to

- (1) Prosthetic valve surgery done only in SCTIMST
- (2) Sample size limited to 20 patients
- (3) Time for data collection limited to one month only
- (4) Not witnessing the actual practice of the patient.

## **SUMMARY**

This chapter deals with introduction, background of the study, need and significance of the study, statement of the problem, definition of terms, objectives of the study, methodology and limitations.

## **REVIEW OF LITERATURE**

**Introduction:** In order to understand fully a given area of interest, the investigator needs to read relevant clinical opinion and prior research on the topic. Clinical opinion refers to articles or books written by experts in a given field. Information from the literature that can provide a foundation for research or enhance practice is analysed in terms of model used, the relevants of the particular opinion or data the recency of the opinion or data and logic or methods used arrive at conclusions.

The review of the literature relevant to the study is following sections :

- (a) Study related to INR self management permits lower anticoagulation level.
- (b) Study related to prosthetic valve thrombosis and effect of anticoagulation.
- (c) Studies related to anticoagulation during pregnancy.

## **Studies related to INR self management permits lower anticoagulation level**

Saggau M. Ennker, Minami. K, Koertke and others conducted a study on "INR self management permits lower anticoagulation levels after mechanical heart valve replacement (from circulation journal 2003 September 9 108). The aim of the study is to find out whether lowering the target range for INR self management would further reduce complication rates they present in term results of 1, 818 patients 908 were categorised as having low dose target range, which was 1.8 to 2.8 for prosthetic in aortic position and 2.5 to 3.5 for prosthesis in Mitral position or in combined valve replacement. The control group 910 patients of INR  $\square$  2.5 to 4.5 in all positions. The result was that in the conventional group 74% of INR valves measured with the target range and low dose target group 72% of INR valves with in target range. The incidents of thromboembolism rate was 0.21% for both groups, the bleeding complication the rate was 0.56% in the low dose regimen group and 0.91% in conventional group. In this study they concluded that early onset INR self-management under oral anticoagulation after mechanical heart valve replacement enables

patients to keep with in a lower and smaller INR target range. The reduced anticoagulation levels resulted in the fewer grade III bleeding complication without increasing thrombo embolic event rates.

A study on International normalized ratio self management after mechanical heart valve replacement : is an early start advantages?" by Dr. Kortke. H. Korfer on 1998. Severe thrombo embolic and hemorrhagic complications after mechanical heart valve replacement essentially depend on the intensity of Oral anticoagulation and the anti-fluctuation of individual international normalized ratio (INR). So that objective is that early self management of INR after prosthetic valve replacement was effective. Random sampling was taken divided into two groups, one controlling INR valves at home and the other being monitored by family practitioners. The result was that 80% of the INR valves recorded by patients at home were within the INR 2: 5 to 4.5 compared with just 62% of INR valves recorded by family practitioners. The over all complication rate (Hemorrhages and thromboembolic events) of the self management group was significantly decreased compared with conventional group starting this form of therapeutic control early after mechanical heart valve

replacement appears to effect a further reduction in anticoagulant induced complications.

A study in Anticoagulation self-testing after heart valve replacement by Rosengart TK on 2000. The objective was that hometesting of coagulation states offers a new opportunity for improved follow up of patients undergoing chronic anticoagulant therapy secondary to valve replacement or other condition. A growing body of date suggests that the ability to monitor INR at home results in a greater maintenance of in range valves compared to a laboratory based testing regimen. Additional evidence suggest that this greater prevalence of in range values will translate to a lower frequency of bleeding and thrombo embolic compilations. Thus home INR testing appears to be developing as an important diagnostic adjunct for improving the post operative care of patients with prosthetic heart valves. or who are receiving chronic anti-coagulation therapy for other reasons.

Home monitoring of patients after prosthetic valve replacement  
– a new method of early detection of valve dysfunction.

Despite enormous progress concerning material and design, patients with artificial heart valves still face a considerable risk of serious complication (eg. hemorrhage, thrombembolism) which sum up to 5-20% within the first 10 post operative year depending on the type and position of implanted prosthalitic valve. To avoid these complication a strict control or both anticoagulation therapy and functional integrity of the prosthetic valve is disfunction. They presented a reliable method for early detection of prosthetic valve disfunction which can be applied daily with minimum effort by the patient him self.

### **Prosthetic valve thrombosis and effect of anticoagulation**

Durrlemon. N. conducted a study on Prosthetic valve thrombosis is a life threatening complication. The objective of study to find out the therapeutic range of INR is important to prevent prosthetic valve thrombosis. From February 1981 through January 2001, 5430 valve operation were performed in 4924 patients at the monotreat heart institute. Of these 39 patients presented with prosthetic valve thrombosis. Most thrombosis is occurred with mechanical prosthetic valve thrombosis (95%). On Prosthalitic valve thrombosis INR was less than 2.5 in 54% with inadequate anticoagulation management in

26% and poor complaints 26%. 82% patients underwent surgical procedure. The 30 day operative mortality and total in hospital mortality after prosthetic valve thrombosis were 25% and 41% respectively they concluded that inadequate level of anticoagulation is most important factor involved in the pathogenesis of Prosthetic valve thrombosis. The overall mortality rate despite surgical treatment remains high. This study under scores the important of meticulous surveillance of anticoagulation therapy in Prosthetic valve thrombosis

Anticoagulation protocol and early Prosthetic valve thrombosis by Talcoacs (afall) on 1999. Prosthetic valve thrombosis is a major cause of morbidity and mortality following heart valve replacement with a mechanical valve. 538 patients who underwent mechanical heart valve replacement between 1999 and 2003 it divided into groups. In group A anticoagulation started on the first post operative period only oral anticoagulant in group B, enoxaparin started. Followed by 6 hours of surgery in addition to oral anticoagulant. Early Prosthetic valve thrombosis occurred at the time interval 3-6 months in group A patients among 15 patients. In group B 6 patients developed early Prosthetic valve thrombosis at a medium interval of 3-5 to 6 months.

The result is that addition of enoxaparin to the anticoagulation regimen in the immediate post operative period reduces early Prosthetic valve thrombosis.

### **Studies related to anticoagulation during Pregnancy**

Prosthetic valve thrombosis in pregnancy a single centre study of 12 cases by Sahnoun - Trabelsi Pregnancy in women with mechanic Prosthetic heart valve cost an increased risk of thromboembolic complication due to changes in hemostasias 12 patients where taken as sample. Initial emergency treatment was surgical in 3 cases and medical 9 cases (thrombolysis in 7 cases and simple heparin therapy in 2 cases). Secondary surgery was carried out in one patient after failure of heparin therapy. This was one death in the surgical group (25%) and 30% foetal mortality in the surviving women. In the thrombolysis group 7 cases 2 women dies. 3 women of the 5 thrombolysis were able to complete there pregnancy and had healthy babies with no factual mortality, one bleeding complication is seen. Finally success rate 75% and mortality 30%. Emergency surgery for valve replacement or thrombolysis the common treatment in this study thrombolysis was

effective in the 71% cases with a low risk of hemorrhagic complication.

Pregnancy in patients with a prosthetic heart valve by Taguchi from Annual Thoracic Surgical journal 2004 April 97 (4) 305-310. Pregnancy and delivery were analyzed in 23 patients one to 10 years after undergoing prosthetic heart valve replacement. The main points of management and management against thromboembolism during pregnancy and delivery are cardiac management against thrombolism. There are 7 patients during pregnancy and 8 after delivery who required hospitalization and treatment for congestive heart failure. Thromboembolism was observed in two during pregnancy and puerperium Five of the patients were not given anticoagulation therapy but when thromboembolic events developed, warfarin was administered. Warfarin therapy was given indefinitely 7 patients & 11 were given massive dosage of dipyrnidole. In the first two groups 4 patients had episodes of thromboembolism.

Pregnancy in patients with prosthetic heart valves the effect of anticoagulation on mother foetus & neonatic by Allmedia PA &

Ambrose JA from American Heart Journal 1992 Aug 124 (2) 413 - 417. Maternal & foetal complication in a consecutive series of 60 pregnancy in 49 patients with prosthetic heart valve were prospectively evaluated. Group 1 consists of 40 pregnancies who were taking oral anticoagulant. No oral anticoagulation was used in 20 patients (group II). In group 1, 3 instances of thrombosis and 2 death. Cerebral embolism one in group I and one in group II. When analysing obstetrical events we observed 4 spontaneous abortion & one hydatid form mole. The incidence of foetal abnormality more high in Group I. 3 infant had warfarin related abnormality.

Anticoagulation during pregnancy by Kimure. K. Endose Mash from American Heart journal; 20002 April (2) 95-104. In patients with mechanical prosthesis long-term anticoagulation is mandating to prevent thromboembolic complication patients those with history of thromboembolic events, anticoagulation therapy strongly indicated. Despite the widespread use of warfarin and heparin during pregnancy the optimal use of anticoagulation during pregnancy remains controversial because of lack of appropriate prospective randomized

clinical trial. Low molecular weight heparin during delivery reduces the bleeding complication than the warfarin therapy.

## **SUMMARY**

This chapter enclosed the review literature from journals and computer. In this literature studies related INR self management permits low dose of anticoagulation, studies related to prosthetic valve thrombosis and effect of anticoagulation and effect of anticoagulation during pregnancy were briefly explained.

## **RESEARCH METHODOLOGY**

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact research is an art of scientific investigation. The advanced learner's dictionary of current English lays down meaning of research as "a careful investigation or inquiry specialty through search for new facts in any branch of knowledge".

Redman and Mory define research as a "systematized effort to gain new knowledge. Some people consider research as a movement from unknown. It is actually a voyage of discovery. Research is an academic activity and as such the term should be used in technical sense".

According to clifford Woody "research comprises defining and redefining problems, formulating hypothesis or suggested solutions, collecting organizing and evaluating data, making deductions and

reaching conclusions and at last carefully testing the conclusions to determine whether they fit the formulating hypothesized”.

D Slessinger and M Stephenson in the Encyclopaedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art”.

Research is, thus, an original contribution to the existing stock of knowledge making for its advancement. It is pursuit of truth with the help of study, observation comparison and experiment. In short, the search for knowledge through objectives and systematic method of finding solution to a problem is research. The systematic method of finding solution to a problem is research. The systematic approach concerning generalization and the formulation of a theory is also research. As such the term ‘research’ refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analyzing the facts and reaching certain conclusions either in the form of solutions towards the

concerned problem or in certain generalization for some theoretical formulation.

## **REASERCH APPROACH**

According to Trecca & Truke 1986 the approach to research is the umbrella that cover the basic procedure for conducting research.

Survey approach was selected by the investigator to asses the knowledge and practice attending prosthetic valve clinics. Printed questionnaire and structured interviewing were based by the researcher.

### **Setting :**

The study was conducted in OPD of Review OPD (Cardiac Surgery) of SCTIMST in Thiruvananthapuram the rational for selection of this institution for the study was it was speciality hospital of cardiac surgery. Only 5 institution were specialized for the cardiac surgery in Kerala. Along this priority given for this institution due to

the modern facility and technique, expert cardiac surgeons and quality of patient care. More over it was a autonomous institution and payment is according to the income.

**Population :**

Patients undergoing prosthetic valve surgery in SCTIMST

**Sample and Sampling technique :**

20 convenient sample, attending prosthetic valve follow up clinics in SCTIMST.

**Inclusion criteria :**

- (1) Followup patients after prosthetic valve surgery in SCTIMST
- (2) All prosthetic valve case included in this study (AVR, MVR, DVR)
- (3) All demographic variables are included in this study.

**Exclusion criteria :**

- (1) Only prosthetic valve cases are included in this study, not tissue valve.
- (2) Immediate post operative patients are excluded from this study.
- (3) Patients with CABG + Prosthetic valve surgery excluded from this study.

**Technique of Collecting sampling :**

Convenient sampling technique was used. The study was conducted by the permission of Head of the Department of CVTS and nurse in-charge. For this written informed consent taken from all patients.

**Development of tool :**

An extensive review and study of literature helped in preparing items for the tool the tools examined and consulted were Mrs. Saramma P.P.M.N Lecturer in Nursing, Mrs. Sudhamoni Amma

Deputy Nursing Superintendent, Content validity of the tool was examined by expert of SCTIMST.

Steps are taken for development of tool are presented below:

**Step-I :**

Total 25 questions (Yes or no questions) 1<sup>st</sup> part Demographic data and second part question. In the beginning of the study 15 to 20 mts was needed for interviewing the patients after a few trial it was reduced to 10 to 15 mts. In some cases more time is needed due to the patients knowledge and understanding ability.

**Step- II :**

First a pilot study was done 4 samples are included in the study. Necessary modification done in the study before conducting the original study.

**Step-III :**

Original study-Data Collection from 28-08-05 to 30-09-05 25 questions are included. It is developed into demographic data 1<sup>st</sup> part,

knowledge assessing question and practice assessing questions – 2<sup>nd</sup> part.

**Description of Tool :**

The tool used in the presented study consisted of two parts.

**Part-I :**

It consists of demographic characteristics of such as Age , sex, Educational status, Occupation, Date of Surgery, Type of valve replaced and present medication.

**Part-II :**

It consists of 25 questions, in this 15 question for assessing the knowledge and 10 questions for assessing the practice.

For each item two or more alternative questions were given out of which only one answer was the best. Testing scoring was done by giving a credit of one for the best response and zero for other responses

or omissions. The possible range of knowledge was 0 to 15 and possible range of practice was 0 to 10

### **PILOT STUDY**

A pilot study was conducted by administering interview questions on 4 patients. After making necessary corrections the questionnaires was finalized and there after study was conducted on 20 patients. The corrections were some questions about the drugs which was not taken with warfarin that makes confusion to patients and it is avoided. Number of practice assessing questions are less and it is also increased. The pilot study gave information regarding the feasibility and effectiveness of the study. For in the pilot study 15 to 20 mts required interviewing the one patient and it is reduced to 10 to 15 minutes in orginal study. The pilot study participants were excluded from the main study.

## **DATA COLLECTION**

Thus there are various method of data collection As such the investigator must judiciously select the method/methods for his own study, keeping inview the following factors.

- (1) Nature, Scope and object of enquiry
- (2) Time factor
- (3) Precision required

This study, survey approach method was used. The data were collected from review OPD of cardiac surgery. For this data collection permission was taken from the authority. First, explanation about the study was given to the patients and informed consent was taken 10 to 15 minutes in required to interviewing the patients. After that health education were given to necessary areas.

## **PLAN OF ANALYSIS**

A plan for data analysis was developed by the investigator after the pilot study. The data obtained from knowledge and practice test would be analysed by descriptive statistics. Percentage would be used for describing the sample. Pie and bar diagram would be utilized to represent the distribution of total scores and sub scores in the different content areas.

## **SUMMARY**

This chapter presented with research approach used for the study, research design of the study setting of the study, sample and sampling technique development of food, description of tool, pilot study, data collection procedure and plan of Analysis.

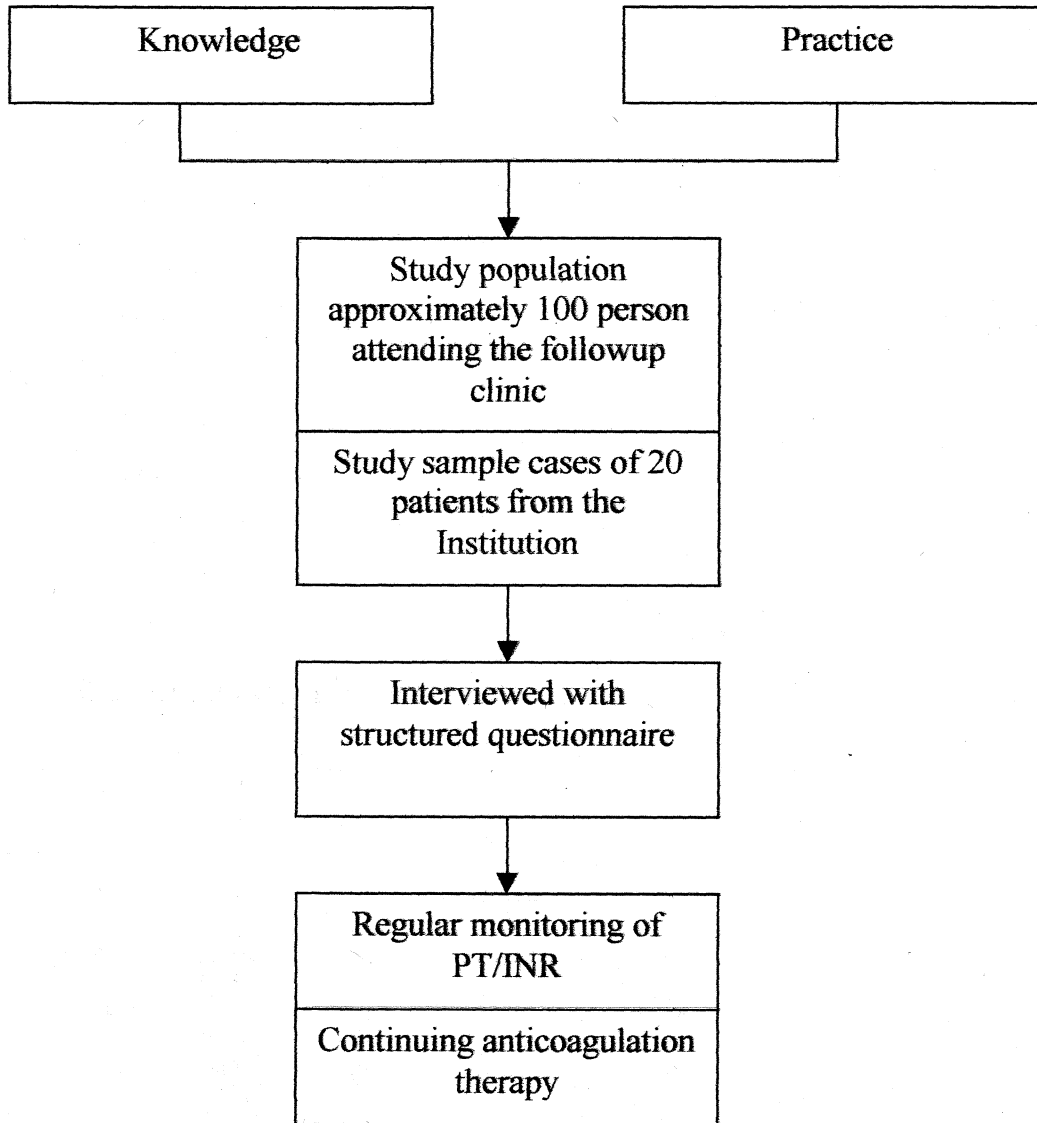
## **ANALYSIS AND INTERPRETATION**

Most research are concerned with drawing inference from sample data about population. The two main purposes of statistical inference are to test statistical hypotheses and to estimate population parameters. In statistical hypotheses we are testing, on information obtained from a random sample, some preconceived notion within that we have concerning the population from which our data are a sample. Statistical estimation deals with estimating values of parameters from observation in a random sample. So this chapter analysis and interprets the dated obtained from knowledge and practice of patients attending prosthetic follow up clinic about anticoagulation therapy in SCTIMST. The analyses of data are presented in three sections.

1. Sample Characteristics.
2. Data on patients knowledge about anticoagulation.
3. Data on Patients practice about anticoagulation.

**Table - I**

**SCHEMATIC DESIGN OF THE STUDY**



## Distribution of samples among their demographic variables

**Table II**

### Distribution of Samples according to their age

Demographic Data	Total Numbers	Percentage
(A) Age		
30-35	4	20%
36-40	3	15%
41-45	5	25%
46-50	4	20%
51-55	2	10%
56-60	2	10%

Distribution of Sample among the age group are shown in Figure I

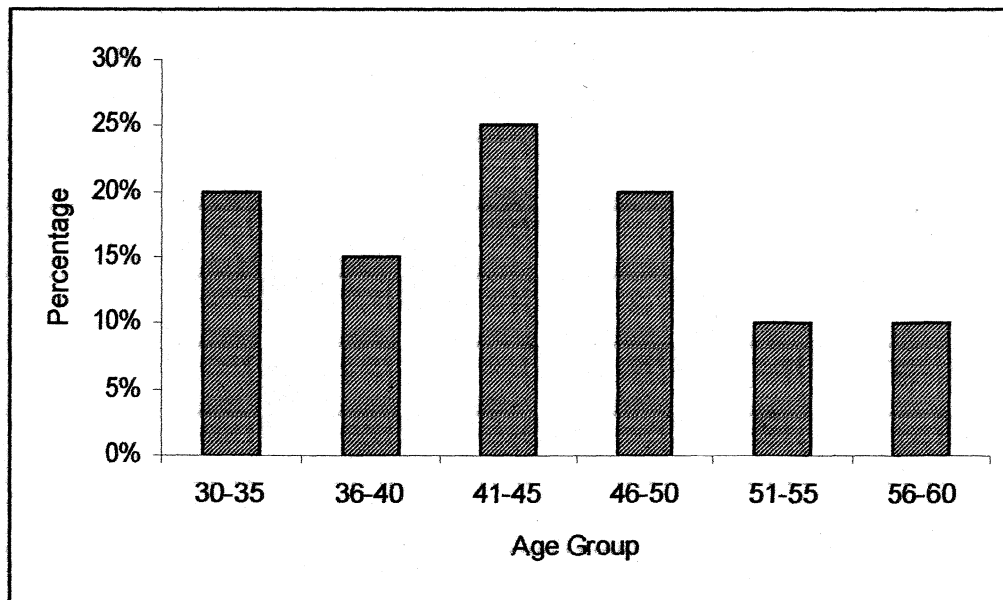


Figure I, represents the age wise percentage of samples taken by the investigator conducting for this study. Age represents in the 'X' axis and percentage denotes the 'Y' axis. Higher percentage of age group in this study are in between 41-45 yrs.

**Table III**

**Distribution of Samples according to their sex**

Demographic data	Total numbers	Percentage
(B) Sex		
Male	15	75%
Female	5	25%

**Distribution of samples among sex are shown in Figure II**

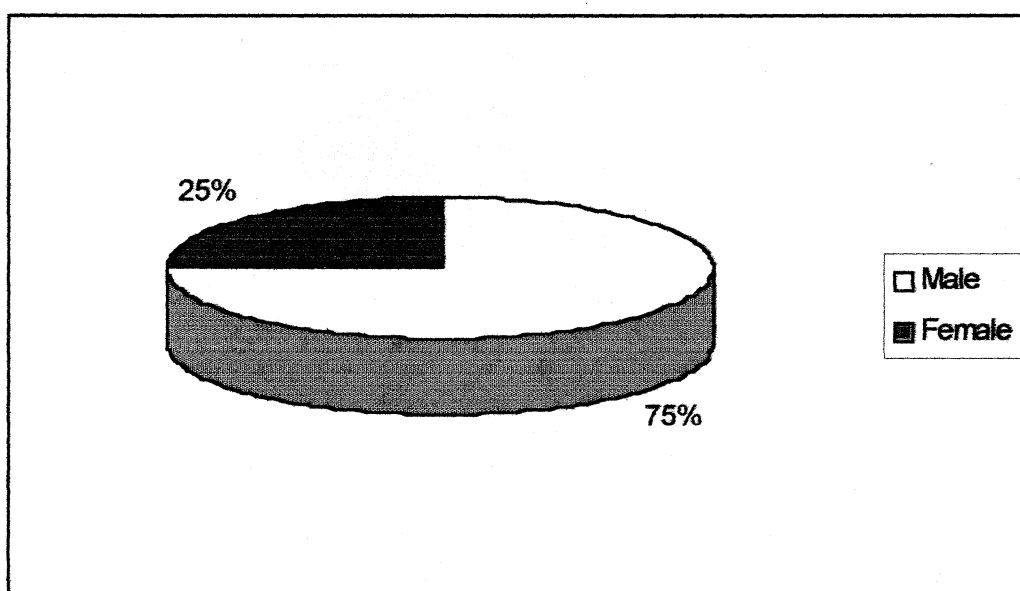


Figure represents the sex distribution of samples in this study.

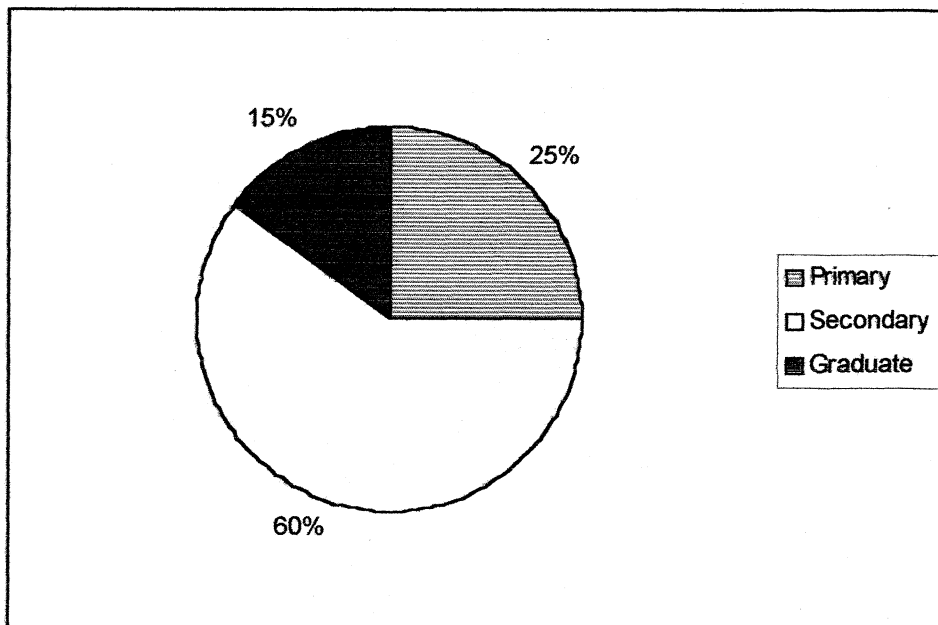
Higher percentage in males than females.

**Table IV**

**Distribution of Samples according to their Educational Status**

Demographic data	Total numbers	Percentage
(C) Educational Status		
Primary	5	25%
Secondary	12	60%
Graduate	3	15%

**Distribution of sample according to their educational status shown in figure III**



In figure III, investigator explore the educational status of the sample. Majority of samples were well educated than from primary level.

**Table V**

**Distribution of Samples according to their occupational status**

Demographic data	Total numbers	Percentage
(D) Occupation		
Working	3	15%
Not working	10	50%
Retired	7	35%

**Distribution of Samples according to their occupational status shown in figure IV**

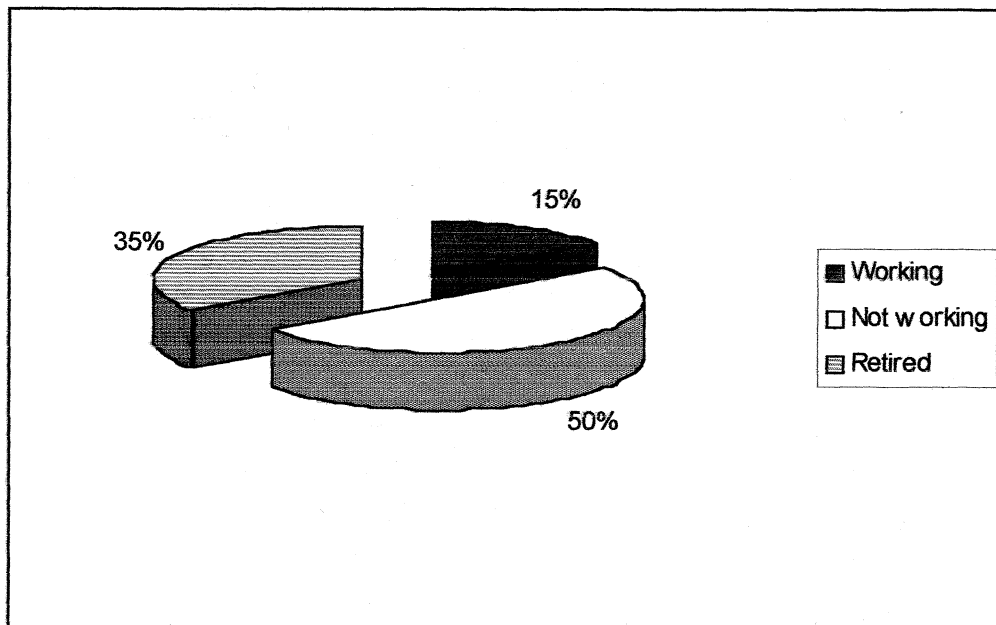
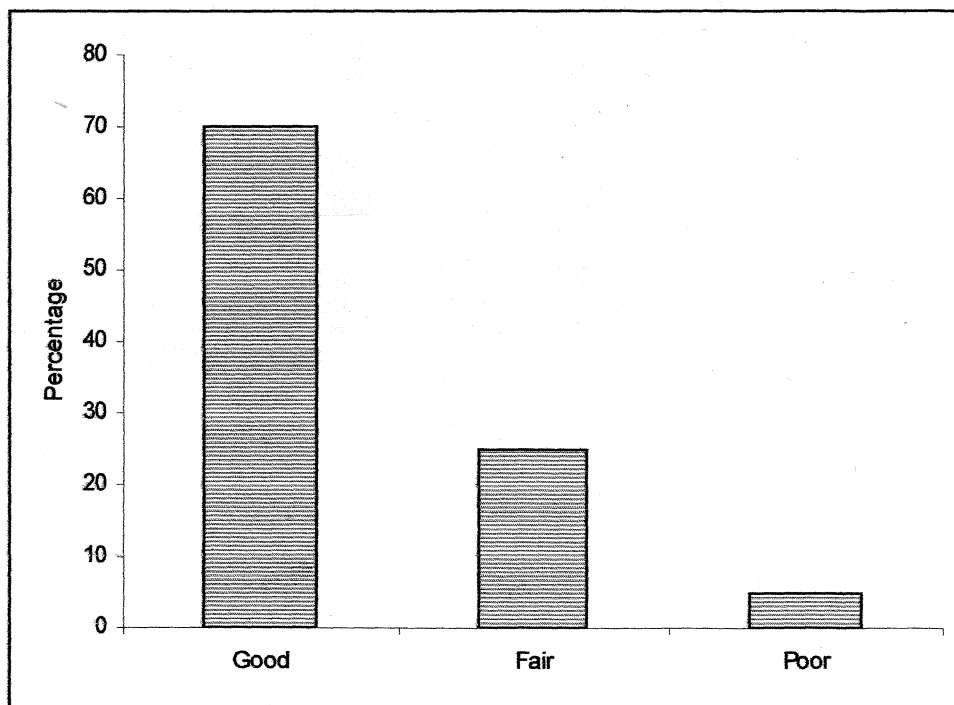


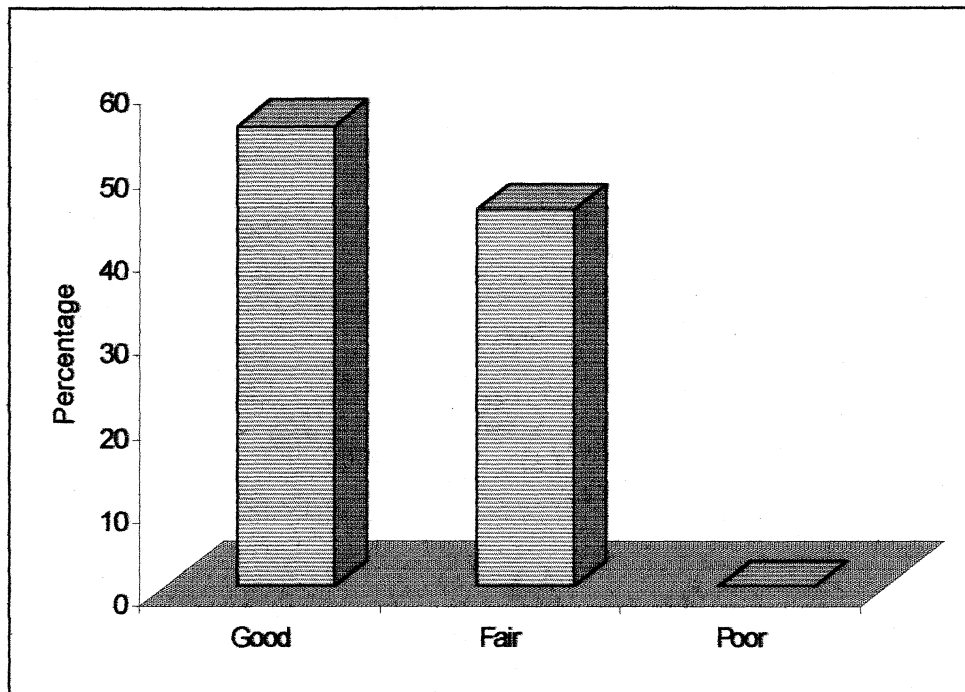
Figure V denotes the level of knowledge of samples. Knowledge graded as Excellent, Good & Fair. Most of them had a good knowledge about complications and need for quality life after prosthetic valvular heart surgeries. Total knowledge score was 66.5%. The highest percentage in knowledge contribute to 70%.

**Distribution of sample according to their knowledge about anticoagulation therapy shown in figure V**



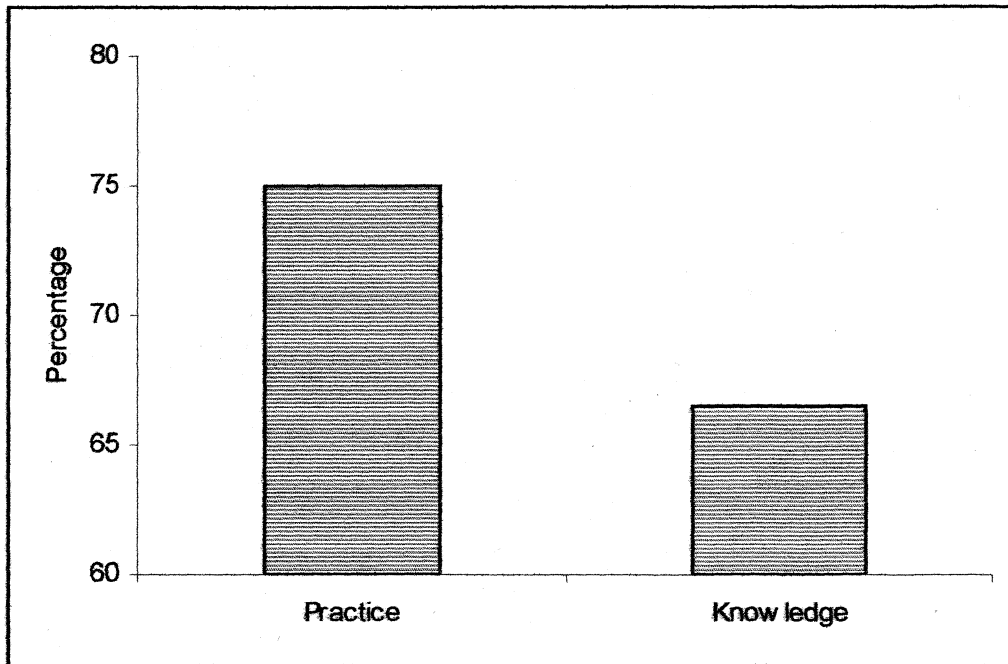
In figure VI, researcher findout the good practice in samples after surgery at home. The total percentage score in practice was 75%. Higher percentage is Good contribute to 55%. Most of the samples comes under good and fair groups.

**Distribution of sample according to their attitude towards the practices to prevent complications shown in figure VI**



## Data on patients knowledge and practice about anticoagulation therapy

This part of analysis show the distribution of total sample of 20 patients. Total knowledge score in all area was 66.5% and total practice was 75% data shown figure VII as Bar diagram.



### Summary

The chapter deals with analysis and interpretation of data collected from 20 patients descriptive was used the analysis Bar diagram and pie diagram were used to describe the knowledge and practice scores of the sample.

## **SUMMARY - CONCLUSION AND RECOMMENDATIONS**

This chapter give a brief account of the present study including conclusions drawn from the findings and possible application of the result. Recommendation for future research and suggestions for improving the present study are also presented.

### **SUMMARY**

This study was undertaken to asses the knowledge and practice about anticoagulation therapy among patients attending prosthetic valve clinic at SCTIMST, Trivandrum.

The specific objectives of the study were:

1. To asses the knowledge of anticoagulation therapy among patients attending prosthetic valve followup clinic
2. To evaluate the practice of patients after prosthetic valve surgery attending followup clinic.

Need of the study was the careful attention to the importance of anticoagulation and its adverse effects leads to an leads to an appreciable reduction in long term morbidity and mortality rate. Education is one method of improving knowledge. The assessment of baseline knowledge being the first step in any successful education programmes.

## **IMPLICATION**

Several implication can be drawn from the findings of the study. This information can be used by staff nurses, student nurses and other health professionals. Instructional programmes in this study can be specifically designed to disseminate promotional messages. Health professionals should emphasis the adverse effect and effect of anticoagulation in an effort to develop healthy habits. Preventive & promotive sectors of health can system are a febrile field for nurses to saw seeds of healthy life style. Health education is an important element for promoting the knowledge and practice among patients after prosthetic valve surgery attending followup clinic.

## **LIMITATIONS**

The limitations in this study are

1. Study was limited to the prosthetic valve done in SCTIMST, Trivandrum.
2. Not witnessing the actual practice.

## **CONCLUSION**

Based on the findings of the study the following conclusions were drawn.

1. The knowledge of patients about the anticoagulation of 66.5%.
2. The practice of patients about anticoagulation therapy 75%.

## **RECOMMENDATION**

The following recommendation are made on the basis of the present study.

1. Health Education Programme about anticoagulation therapy can be conducted in follow up clinic of our institute.
2. A similar study can be conducted in other health can in other health care Institution.
3. Out patient self-management warfarin therapy can be conducted in community setup.

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# **APPENDICES**

## ചോദ്യാവലി

- (1) നിങ്ങൾക്ക് “കൃത്രിമ വാൽവ് വച്ച രോഗികൾ ശ്രദ്ധിക്കേണ്ട കാര്യങ്ങൾ” യെന്ന കുറിപ്പ് കിട്ടിയോ?  
(ഉവ്വ്, ഇല്ല)
- (2) ഇത് നിങ്ങൾക്ക് പ്രയോജനപ്രദവും മനസ്സിലാക്കാൻ പറ്റാത്തതും ആണോ?  
(ഉവ്വ്, ഇല്ല)
- (3) നിങ്ങൾക്ക് PT/INR യെന്ന രക്ത പരിശോധനയെക്കുറിച്ച് അറിയാമോ?  
(ഉവ്വ്, ഇല്ല)
- (4) ഡിൻജിമാൻ, വാർഫാറിൻ യെന്ന ഗുളിക കഴിക്കുന്നതിന്റെ പ്രാധാന്യം അറിയാമോ?  
(ഉവ്വ്, ഇല്ല)
- (5) ഈ ഗുളിക കഴിയ്ക്കാതിരുന്നാൽ എന്തെങ്കിലും കുഴപ്പമുണ്ടോ?  
(ഉവ്വ്, ഇല്ല)
- (6) രക്തം കട്ട പിടിക്കാതിരിക്കുന്നതിനുള്ള PT/INR എത്ര കാലയളവ് വിട്ട് ചെയ്യണം?  
(ഓരോ ആഴ്ചയിലും, ഓരോ മാസത്തിലും, ഓരോ വർഷത്തിലും, ഓരോ മൂന്നു മാസത്തിലും)
- (7) കൃത്രിമ വാൽവ് കഴിഞ്ഞ ശസ്ത്രക്രിയ കഴിഞ്ഞ രോഗികളിൽ PT/INR എത്രയായി?  
(1-2, 1.5-2.5, 2-3.5, 2.5-3.5)
- (8) നിങ്ങളുടെ PT എത്രയായി നിലനിർത്തണം?  
( $12/_{12}$ ,  $12/_{12} - 24/_{12}$ ,  $18/_{12} - 30/_{12}$ ,  $18/_{12} - 36/_{12}$ )

- (9) ഈ ഗുളിക എപ്പോഴാണ് കഴിയ്ക്കേണ്ടത്?  
 (1) ദിവസത്തിൽ ഏത് സമയവും  
 (2) എല്ലാ ദിവസവും ഒരേ സമയം  
 (3) ഇടവിട്ടിട്ടുള്ള ദിവസങ്ങളിൽ
- (10) മുകളിൽ പറഞ്ഞ ഗുളിക എത്ര കാലം കഴിക്കേണ്ട?  
 (ജീവിതകാലം മുഴുവനും, 6 മാസം, 5 വർഷം, ഒരു വർഷം)
- (11) ഈ ഗുളിക കഴിക്കുന്നവർക്ക് ഗർഭിണിയാകാമോ?  
 (അതെ, ഇല്ല, ഒരു ഡോക്ടറുടെ നിർദ്ദേശം ആവശ്യമാണ്)
- (12) ഗർഭസ്ഥ ശിശുവിനെ ഈ ഗുളിക ഏതെങ്കിലും വിധത്തിൽ ബാധിക്കുമോ?  
 (ഉവ്വ്, ഇല്ല)
- (13) ഈ ഗുളിക കഴിക്കുമ്പോൾ രക്ത സമ്മർദ്ദം നിയന്ത്രിക്കേണ്ടത് ആവശ്യമാണോ?  
 (അതെ, ഇല്ല)
- (14) രക്ത സമ്മർദ്ദം നിയന്ത്രിച്ചില്ലെങ്കിൽ എന്ത് സംഭവിക്കും?  
 (മസ്തിഷ്ക രക്തസ്രാവം, ഒന്നും സംഭവിക്കില്ല)
- (15) ഈ ഗുളിക കഴിക്കുമ്പോൾ കാബേജ്, ക്വാളി ഫ്ലവർ, ഉള്ളി, മത്സ്യം തുടങ്ങിയ Vit K അടങ്ങിയ ആഹാരം ധാരാളം കഴിക്കാമോ?  
 (ഉവ്വ്, ഇല്ല)
- (16) കൊഴുപ്പ് അടങ്ങിയ ഭക്ഷണ പദാർത്ഥങ്ങൾ ധാരാളം കഴിക്കാമോ?  
 (ഉവ്വ്, ഇല്ല)
- (17) മദ്യപാനം, പുകവലി തുടങ്ങിയവ പൂർണ്ണമായി ഉപേക്ഷിക്കേണ്ടതാണോ?  
 (അതെ, ഇല്ല)

- (18) ഈ ഗുളികയും അളവ് കൂടുതൽ ആയാൽ എങ്ങനെ മനസ്സിലാക്കാം?  
(ക്ഷീണം, തലവേദന, പനി, ശരീരത്തിന്റെ ഏതെങ്കിലും ഭാഗത്ത് രക്തസ്രാവം)
- (19) ഈ ഗുളിക കഴിക്കുന്ന രോഗികൾ മുറിവുകൾ പലതും ഒഴിവാക്കേണ്ടതാണോ?  
(ഉവ്വ്, ഇല്ല)
- (20) ഒരു ഡോസ് ഗുളിക കഴിക്കാൻ മറന്ന് പോയാൽ എന്ത് ചെയ്യും?  
(പിറ്റേ ദിവസം ഇരട്ടി ഡോസ് കഴിക്കും, PT/INR നോക്കുക, ഓർക്കുമ്പോൾ അതേ ദിവസം അതേ ഡോസ് കഴിക്കുക)
- (21) രക്തം കട്ട പിടിക്കാതിരിക്കുന്നുവെന്ന കുറിപ്പ് കൈവശം വെച്ചിരിക്കുന്നതിന്റെ ആവശ്യകതയുണ്ടോ?  
(ഉവ്വ്, ഇല്ല)
- (22) വാർഫാറിൻ എന്ന ഗുളികയുടെ പാർശ്വഫലങ്ങൾ അറിയാമോ?  
(ഉവ്വ്, ഇല്ല)
- (23) നിങ്ങൾക്ക് DVR ചെയ്തിട്ടുണ്ടെങ്കിൽ PT/INR എത്രയായിരിക്കണം?  
(2.5 - 3.5, 2-3, 3-4)
- (24) AVR ശസ്ത്രക്രിയ ആണെങ്കിൽ PT/INR എത്ര?  
(2.5 - 3.5, 2-3, 3-4)
- (25) MVR ശസ്ത്രക്രിയ ആണെങ്കിൽ PT/INR എത്ര?  
(2.5 - 3.5, 2-3, 3-4)