

# The monitoring of prothrombin time ratios in general practice - a model for chronic disease care?

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## Abstract

A small group of ten patients on long-term treatment with anticoagulant drugs were offered the opportunity to attend an anticoagulation clinic run by their general practitioner over a one year period. All had previously been travelling long distances to attend over-crowded hospital clinics. Attendance at general practice clinic was excellent, control of anticoagulation was good and there were no problems advising on dose alterations. The implications of this study for the management of this and other chronic conditions in General Practice are discussed.

## Introduction

The problems associated with long term anticoagulation therapy are not limited to the possible side effects of the drug or to complications of the original clinical problem. There is also a need for regular blood tests and alterations in drug dosage. For elderly or infirm patients, as well as those living in rural areas, there can be the added and serious difficulties of transport to and from the hospital anticoagulant clinic.

The potential for management of chronic disease in general practice is now well recognised and offers many advantages to patients, GPs and hospitals.<sup>1,2,3</sup> This study aimed to explore the possible effects of setting up an anticoagulant service within the practice as an example of one of the services for which patients had previously been expected to travel to hospital.

## Method

During a twelve month period between January and December 1990, all patients attending the practice who were on long-term anticoagulant treatment were invited to attend the newly organised GP clinic for their prothrombin time estimations. Results were available within twenty four hours, tabulated and recorded on file and anticoagulant drug dosage adjusted as necessary. The patients either contacted the practice or were notified by phone to receive updating on their treatment. Follow-up visit appointments were notified at the same time.

## Standard

All patients who attend anticoagulant clinics are now standardised to have their results reported as International Normalised Ratios, INR. The therapeutic range for oral anticoagulant control varies and target values are between 2.0 INR and 3.5 INR in venous and arterial thrombosis and cardiac valve prosthesis patients respectively.<sup>4,5</sup>

## Results

A total of ten patients in the practice were on coumarin anticoagulant warfarin sodium during the study period. All chose to avail of the new service from the GP. A number of other patients for reasons of clinical judgement were not deemed suitable for this type of management.

Table 1 illustrates the patient profile, with duration of the

disease diagnosis at the time of commencing the study. Some of the patients ceased therapy on specialist advice during the twelve month period whilst others entered. In all, 101 PTR estimations were performed at varying intervals of one to four weeks as appropriate. Control of anticoagulation was overall very good, with an average PTR reading of 2.2 INR: however, on a few occasions values fell as low as 1.0 INR with a single high of 7.1 thought to be caused by patient confusion with tablet strength identification.

Table 1

ID Code	Age	Sex	Diagnosis (reason for anticoagulant)	Duration
PMcG	42	M	Myocardial infarct Cerebral embolus	1981
WK	75	M	Aortic stenosis Aortic valve prosthesis	1982
ET	57	M	Rheumatic mitral stenosis Atrial fibrillation	1989
PP	69	M	Rt Femoral artery occlusion Femoral-Popliteal by-pass	1990
JP	79	M	Recurrent Deep Vein 1975/80 Thrombosis	
FS	72	M	Mitral Stenosis Mitral Valvotomy	1980
LMcM	91	F	Rt Brachial artery embolus	1989
MO'D	55	M	Coronary artery by-pass graft	1986
KK	79	F	Pulmonary embolus secondary to cholecystectomy	1990
JE	68	F	Pulmonary embolus secondary to surgery for hiatus hernia	1990

## Discussion

Of the patients served by the GP clinic, one is confined to a wheelchair and another is hemi-plegic. The minimum return distance travelled by patients to hospital was 60 miles, sometimes on a weekly basis and at least monthly, for PTR estimation. The advantages to the patients included the obvious ones of avoidance of fatiguing and time consuming travel and waiting, along with the availability of their GP to

advise on any problems with medication. For example, frequent changes in dosage of three differently coloured tablets may lead to the sort of confusion which resulted in the single PTR of 7.1. This problem may be minimised by the availability of a single doctor to give advice.

There are implications for other conditions besides those requiring anticoagulation therapy in this type of chronic disease care. There are important advantages for patients, their doctors, hospitals and health board, particularly in rural areas, by being able to provide a near domiciliary service as a general practitioner. Such care may be either in combination with hospital based care or may involve the hospital when complications arise.

In conclusion this study indicates the possibility of monitoring and treating small patient groups with specific problems in the field of general practice. The advantages over prolonged hospital management to the patient are emphasised. Cost effectiveness is obvious.

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