WARFARIN USE IN THE ELDERLY: THE NURSES' PERSPECTIVE

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ABSTRACT

Objective:

To explore the barriers to warfarin use from the perspective of nurses working in aged care.

Design:

A qualitative study, involving a semi-structured group interview, during March-April 2001.

Setting and Subjects:

Eleven nurses, employed within the catchment of the Northern Sydney Area Health Service, who were involved in the care of elderly warfarinised patients.

Main outcome measure:

Identification, via thematic analysis, of the main themes underpinning the nursing perspective on warfarin use in this setting, with regard to their perceived role/s, experiences with patients, and potential strategies for managing the therapy.

Results:

Five main themes were identified: *perceived patient attitude toward warfarin; barriers to the use of warfarin; expressed lack of confidence in the processes involved; nurses' role in warfarin use*; and strategies to improve warfarin use. Nurses were concerned about warfarin use in the elderly, but felt they had a limited capacity to intervene.

Conclusion:

Nurses are potentially underutilised as a resource and support for both patients and prescribers, in the management of warfarin therapy.

INTRODUCTION

Nowadays, the professional role of nurses is quite diverse, ranging from patient care on the ward or in the community, through to specialist services in the capacity of clinical consultants, specialists, educators, and practitioners. However, there is one clinical area, within Australian practice, that has not utilised the nursing profession to its fullest potential: anticoagulant therapy.

Although nurses may work in anticoagulation clinics or in post-acute care teams that liaise with anticoagulated patients, the extent to which they engage with warfarin therapy appears to be somewhat restricted and perhaps superficial. This is unfortunate, as nurses maintain a unique relationship with patients, which is unlike other health professionals.

Internationally, there has been greater appreciation of the nurses' role in this setting, including nurse-led anticoagulation monitoring systems (Brown et al 1998;

Connor et al 2002; Hennessy et al 1998; Taylor et al 1997), hospital-based nurse practitioner-led anticoagulation services utilising computerised decision-support systems (Vadher et al 1997), and nurse-led near patient testing in GP surgeries (Fitzmaurice et al 1998).

Exploring the role of allied health professionals, particularly nurses, in this clinical area has become paramount as the number of patients requiring anticoagulation, for common indications such as atrial fibrillation (AF), is increasing. Despite pivotal evidence to support the use of warfarin therapy in AF (Atrial Fibrillation Investigators 1994; Hart et al 1999), several Australian studies have demonstrated that, even in the absence of apparent contraindications, warfarin therapy remains underutilised (Ang et al 1998; Elliott et al 1999; Stewart et al 1999), particularly in the target population of elderly patients with AF (Bajorek et al 2002). One reason for this suboptimal use includes a lack of support services to assist both prescribers and elderly patients with the initiation and subsequent management of this therapy.

AIM

In view of the recognised underutilisation of warfarin therapy in the elderly, and lack of local support services, the aim of this study was to explore the issues surrounding the long-term use of warfarin in elderly patients by examining, in depth, the unique perspectives of nurses working in aged care. The specific objectives were to: describe nurses' experiences and attitudes toward the use of warfarin in elderly patients; explore nurses' perceptions regarding the risks and benefits of warfarin therapy in elderly patients; identify any 'barriers' to the long-term use of warfarin as perceived and/or experienced by nurses; and investigate nurses' perceived roles regarding warfarin therapy.

METHOD

Study Design

In this qualitative study, a group interview (focus group) was conducted to draw upon attitudes, feelings, beliefs, experiences and reactions in a way that would not be feasible using observation, one-to-one interviewing, or questionnaire surveys alone (Morgan and Kreuger 1993). A semi-structured process was used where each discussion was moderated by a facilitator, co-facilitator, and scribe using a set of broad open-ended questions to elicit the nurses' experiences with warfarin, and their opinions on how warfarin use could be optimised. These questions reflected the pre-determined research objectives and were pre-tested in mock interviews.

Demographic data was collected separately using a specifically designed questionnaire. Each session was tape-recorded with additional note-taking by the scribe, who also observed and noted any non-verbal behaviour (facial expressions, body language, paralanguage etc) that reinforced significant statements.

Recruitment of Participants

Nurses involved in the inpatient and/or outpatient management of elderly patients were recruited via study flyers displayed in key locations around the project hospital and larger community, including the: aged care ward, community aged care assessment team, acute post-acute care team that oversees the hospital-to-community care of warfarinised patients, and community nursing services. Additionally, information was conveyed during weekly clinical meetings, departmental seminars, and ward rounds. Sampling was opportunistic to capture the key nursing population, and purposive to find nurses willing to discuss their experiences; each was screened upon enquiry, to ensure that they worked with warfarinised elderly patients, by asking for a brief description of their experiences.

Participants provided their informed written consent to take part and, to compensate for any losses incurred by attendance (eg., time off during working hours, loss of lunch hours, travel costs) all were offered a nominal payment of $25.00, additional reimbursement of travel expenses, and a light meal. The study was approved by the institutional human research and ethics committee.

Data analysis

The audio-taped discussion was transcribed verbatim, then manually analysed to identify emergent themes. Thematic analysis breaks the text down ('reduction') into defined units (words, statements) that are categorised into themes. A phenomenological approach was used, focusing on understanding the essence of experiences about a phenomenon via statements, meanings, themes, and general descriptions of the experience (Husserl 1931; Moustakas 1994).

To ensure the conclusions drawn from the analysis were valid (ie. consistent with the actual content and grounded in data) two of the investigators (acting as co-facilitator and scribe) observed the discussion and then independently reviewed the transcripts to identify relevant themes, issues and supporting statements, before jointly discussing the findings to attain a consensus. The findings were checked against the supplementary notes taken by the scribe and also reviewed by the main facilitator, then fed-back to nurses to ensure the accuracy of the session's interpretation.

RESULTS

Participants

In total, 11 nurses working in aged care (all female), representing each of the main nursing services participated in the study; their mean age was 42.5 (+/- 10.4) years (range 25-54 years). Three nurses worked on an aged care ward; two worked as aged care clinical nurse

specialists/consultants; four worked for a home nursing service; and two worked as hospital-to-community liaison nurses. On average, the group had 18.9 (+/- 11) years (range 3.5 - 33 years) professional experience working with elderly warfarinised patients.

Perspectives of Nurses – Emergent themes

These nurses focussed on five main themes during the group interview: *Perceived patient attitudes towards warfarin; Barriers to the use of warfarin; Expressed lack of confidence in processes involved; Nurses' role in warfarin use; Strategies to improve warfarin use*.

Theme 1: Perceived patient attitudes towards warfarin

Nurses observed that patients' involvement in their warfarin therapy ranged from absolute dependence on external direction and support, through to complete engagement in the management processes. Some patients appeared to become complacent toward warfarin after a period of time. Nurses believed that patients were generally familiar with what type of medication warfarin was (a 'blood thinner'), although they did not always understand why it was prescribed for them.

It was perceived that patients' knowledge of warfarin was focused more on the practical aspects of dosing, rather than the indication for use or associated risks. Nurses also felt that most patients were also unfamiliar with the actions to be taken when problems, such as bleeding, arose.

We usually see them of a night-time as their dose is adjusted and they say 'why am I having two tablets tonight and I had three tablets last night?'

They know what it is, but their usual difficulty is that they've had a bang to the skin and they can't stop the bleeding.

Some of them are actually monitoring —they take down their international normalised ratio (INR) as well.

There are often people too, who have been on it for donkey's years following heart surgery…they are a bit lackadaisical.

Nurses felt that patients overall were accepting of their warfarin therapy, recognising its importance. Only a few patients protested about it: 'At times it is fairly clear they don't want to be on it.' Day-to-day dosing issues, on a background of poly-pharmacy and impaired memory, were the perceived sources of disquiet and dissatisfaction for many patients.

Some patients talk about how they hate to take medications per se, a number of tablets or…every day or two times a day, it's that kind of issue for them…not one specific tablet…'Why do I have to take six this morning, I only had to take five yesterday morning?', as opposed to what they are taking, it's just the number they take.

The nurses perceived that most patients were, however, unperturbed about the risk of bleeding, even to the point of ignoring precautionary measures, that is, until serious adverse events occurred. Bruising was a commonly registered complaint, albeit due to cosmetic reasons: *'Some of the women they get those little bleeds under the skin and they hate the disfigurement.'*

Table 1: Perceived barriers to warfarin use

Functional patient barriers
The only thing that probably stands out like a sore thumb would be somebody who had an excessively high fall risk. It might trigger a few questions…
It's one of those things that you always remember…patient in his late 70's…in the middle of the night had gotten out of bed…he must have been going to the toilet…fallen down the stairs…bled to death.
Cognitive barriers
I've got a bit of a bee in my bonnet about cognition, unless they have a person who is a carer…I think it is risky, isn't it? It is something that often gets overlooked in a hospital situation…people present quite well but then are taken out of the confines of the hospital bed.
Poly-pharmacy
They start on warfarin…in hospital and they'll come home and think 'I've got a niggle in my knee, I'll just take some [naproxen] or [diclofenac]' and they don't realise the interactions.
A lot of the elderly are taking herbal supplements and things…they don't think they are drugs.

According to nurses, patients felt powerless in terms of the decision-making process and hence did not express their dissatisfaction being on the therapy. It appeared to these nurses that patients rarely challenged health professionals about being on warfarin therapy per se, but rather queried dosing issues once a problem had arisen. It was perceived that a good relationship with the general practitioner (GP) was necessary to empower patients to voice their concerns.

A lot of the older patients – 'my doctor says it is good for me so I'll take it…they are an expert'…are pretty bad because they don't ask questions.

They just don't voice a concern about taking it because they don't see they have any other option…just part of the treatment that's been prescribed…they have to put up with it.

One patient…pretty responsible and tells the GP…he rings up and gets his INR organised…he had a huge bleed and actually challenged the doctors that he was on too high a dose.

Theme 2: Barriers to the use of warfarin

Nurses described several sources of difficulty regarding warfarin use (table 1).

Table 2: Nurses expressed lack of confidence in processes

Lack of confidence in patient assessment processed regarding warfarin initiation
I just wonder how much you would have an opportunity to challenge…if the person has cognitive impairment or depending on their home situation…how much that's taken into consideration.
Quality of life, if they are 95 years of age, in a nursing home, they are being stabbed every three days, they are probably going to have a fall once a week, what are we doing for them?
The doctors all roll up at 9 o'clock in the morning to do their rounds — 'yep they can go home…there are five other people down in A&E waiting to come up, let's ship them down to transit lounge.' —they get home and open up this little plastic bag with all their drugs…pharmacist hasn't had a chance to talk to them…we haven't seen what they're on…pressure to get them out.
Patient Education
Education in the hospital ward…you are asking a lot when somebody is in a four bedded room…[pharmacist] trying to explain something to you…you can't hear, you can't sleep very well…probably not the best place for you to have all this stuff explained to you…only so much we can do, it's just too hectic.
How much education do the local chemists do? That is where these people go and get their drugs.
Follow-up in the community: GPs versus other services
If they have a good relationship and the GP takes…a bit of an interest in the patient and the patient takes an interest in their own health, then that works. But if you get a fall down in any of those things…they don't get monitored very well.
Less GPs do home visits…people have trodden off to medical centres…interaction is more rushed.
We are in the link with the haematology department…they follow-up the patient…once a week to a fortnight . Do INRs every day or every second day and then they are discharged to their GP who will organise for an INR to be done…Or we liaise directly with the GPs and do daily INRs and the GP will see a patient as soon as they are discharged…home visit or the patient will see the GP.

Table 3: Nurses' perceived roles in warfarin therapy

Level of current input within the hospital setting
If it is written up I get it out and give it to them…God knows we have enough to do without looking up these extra things like should they be on warfarin.
I give out what is charted pretty much…the standard pink form, if it needs charting we'll look up the INR, write it down and write 'would doctors please chart it'…if you find out what the INR is and then they just look at the little box…probably what we could very easily do ourselves.
Level of current input within the community setting
We don't actually say to put them on warfarin…we only get them when they are already on warfarin really…they continue. It's more about patient education.
We liaise with the GP on a daily basis and use the guidelines from the hospital…for anticoagulation and we can't say to the doctor — 'this is what is recommended'…but we fax them the guidelines and we try and persuade them to keep within those guidelines.
I had an incident over the weekend where a GP had prescribed a large dose of warfarin for a lady who had been quite unwell. I actually rang him, not challenged, but asked him was he sure that was the dosage he wanted…'perhaps we can do an INR sooner rather than in three days, we could do one tomorrow'…we've got an opportunity to work that closely with the doctors
Opportunity to intervene
Generally the GPs and the hospital have made the decision if they want to warfarinise the patient subsequent to heparinisation or straight on to warfarin. As for us initiating it —no.
I have found that in the community there is generally more opportunity for nurses to have that input…you get to liaise with the GP.

The risk of falls was considered to be a major hazard in the elderly, as well as functional and cognitive impairment. Surprised and concerned, nurses also described that they frequently saw patients who were warfarinised despite some degree of cognitive impairment and apparent memory problems. Intact cognition was vital to safe warfarin use both in a practical sense and in terms of successful patient education.

Nurses expressed doubt about the ability of a patient to cope with warfarin therapy in the home environment, given the perception of poor in-patient assessment prior to its initiation. Problems with cognition were not the only factors they felt increased the risk of misadventure with warfarin. INR control was affected by concomitant medication use.

Theme 3: Expressed lack of confidence in processes involved

Following from the earlier concerns, nurses expressed that they were not confident about the processes involved in initiating patients on warfarin, nor with the services provided by other health professionals (table 2).

Some nurses questioned whether clinicians adequately considered some of the cognitive and functional barriers to warfarin use in older patients. An over-burdened public hospital system was perceived as the cause of compromised assessment and preparation of elderly patients, both in terms of education provision and organising follow-up services.

Nurses also questioned the quality of education that elderly patients received on the wards by pharmacists, stating that more effort was needed in order to eliminate unnecessary intrusions. Community pharmacists, who were considered to be in the most opportune position for ongoing education and counselling, were not perceived to be a reliable 'back-up' system for these patients.

Much emphasis was placed, by these nurses, on the role of the GP to adequately educate, monitor and follow-

up older patients, but the success of this process depended on their relationship with the patient. These nurses, however, believed that efficient support systems, particularly for INR monitoring, were widely available and catered to most patient situations.

Theme 4: Nurses' role in warfarin use

Nurses agreed that, on the whole, they had little input into the prescribing of warfarin for their patients (table 3).

They were generally unaware of the indications, or the existence of guidelines, for warfarin use, albeit recognising that more of their elderly patients were being prescribed it for AF. At the ward level, nursing involvement was limited to prompting the doctors to check INR results and dosage administration.

Consistent with this focus on the practicalities of warfarin use, nurses relied on 'tools' such as medication charts and *'the pink form that we use in the hospital that gives you guidelines that gives you what dosages people should be on',* to assist them in this. They maintained a very patient-centred and pragmatic attitude toward their role in this setting. Those who worked in the community setting, particularly on a hospital-to-community liaison basis, reported greater involvement due to increased opportunities to liaise with GPs. However, their primary commitment was still to ensuring appropriate patient care.

Although the nurses felt they were qualified to take a greater role in monitoring and assessing patients, both in acute and long-term care, they felt under-resourced within their establishments to do this effectively. Furthermore, these nurses did not desire a greater role in the use of warfarin, as they felt this was the entirely the doctor's role. As far as they were concerned, the doctors were responsible for making the decisions, whilst nurses were responsible for 'follow-up'.

However, many nurses felt they were in a prime position to identify patients who were having problems, although they did not feel authorised or resourced enough to address these needs adequately.

Occasionally patients are on contraindicated medication and you pick up on it when you visit them…and sometimes they double dip on the doctors as well.[ie. see more than one doctor.]

You need to be twice as vigilant when you are checking the medications in the home situation…what's there, what they are supposed to be taking as opposed to what they might be taking.

Patients coming in on herbals usually have a whopping great big bag full of them. They'll have four medication charts and the family will be insisting they stay on them…and the poor patient is saying, 'I don't want that many, I'm sick of having them, I don't want it.' And you think, 'if it was up to me love, I'd just chuck them all in the bin.'

Theme 5: Strategies to improve warfarin use

To assist warfarin use in the elderly, nurses felt more could be done in the way of education. In particular, more effort was required in getting patients to refer to the warfarin booklets for advice. They felt it was also crucial to encourage patients and their carers to take a more active role in their own therapy.

Prompt people to have [INRs] done…[to be] aware of the side-effects of warfarin and the risk of injury or bleeds, but they need to be educated in this way.

One of the things that I often tell the patient, is that you are responsible, nobody else is, for your blood tests and everything…it will make them remember.

Given that 'education is useful for people who can understand and who can carry out instructions, but education is useless for people with dementia…even if you educate them, they forget', nurses felt that a greater utilisation of carer support and services was vital. The perceived role of carers, whether the patient's relatives or professional agents, ranged from the simple tasks of dosage administration to ongoing patient surveillance. It was felt that performing home visits to patients was particularly important in terms of patient surveillance.

A lot of them need the help of some nurses actually to go in…and give the pills…even with the [blister] pack a lot of elderly people have no idea how to press the tablet out…home nurses have to go in just to press the tablet out for the client.

Sometimes their partner, the same age, is half demented and doesn't really know what is going on. They can't see or they can't understand so a community home nurse can actually monitor the blood test and then the dosage…they play a very important role in doing that.

Others believed that there needed to be a more thorough assessment of older patients prior to discharge, particularly with respect to cognition, in order to ascertain their ability to cope with warfarin at home.

Guidelines…if someone does have a cognitive problem, that they actually be investigated, if they live alone, to see that they are okay to be put on warfarin and are there any other options.

We had a self-administering program trial that was running down there in terms of medications…'Going home? Let's start getting them self-administering with supervision in the ward. Can they read the chart first? Have they got spectacles that are new? Do they understand what is going on?' And if they are doing it right for a week in hospital, then I would feel comfortable sending them home. I think that is something that could be trialled.

DISCUSSION

Although previous studies have explored the perspectives of prescribers (Lip et al 1996; McCrory et al

1995; Peterson et al 2002), none have probed further to identify the experiences and perceptions of allied health professionals regarding the use of warfarin in the elderly population. This is the first known study to have examined the perspectives of nurses in this setting.

Overall, nurses in this study appeared to be quite fearful of warfarin, expressing hesitation and concern about their patients being warfarinised. This in part reflected their expressed lack of awareness regarding the specific indications for warfarin therapy, and in part their acute awareness of the difficulties associated with its use in the elderly, given their level of patient contact. Those who had extensive opportunity to assess patients' abilities in activities of daily living most explicitly stated that the risk of misadventure with warfarin increased with age-related frailty, functional and cognitive impairment, a predisposition to falls, potential non-compliance, poly-pharmacy, and a general lack of education. Nurses expressed doubt as to how well these factors were assessed or addressed by prescribers when warfarin therapy was initiated.

Despite their concerns about the decision-making processes regarding initiating warfarin in any patient, nurses generally believed that they had no role here. They conceded that this responsibility was entirely the prescriber's, and if nurses had any involvement at all, it was merely to confirm the prescriber's intentions if there was any doubt.

Community based nurses had some involvement in the short term follow-up of patients for blood testing and dosage adjustment, while hospital based nurses stated they simply administered prescribed doses, after reminding doctors to chart these. They were motivated to intervene only when they felt warfarin should be ceased, so cessation rather than treatment initiation was their focus. This was further compounded by their lack of awareness of the specific indications for therapy, such as stroke prophylaxis in atrial fibrillation.

Although nurses entirely relied on prescribers to appropriately manage the patient over the long term with respect to routine INR testing, subsequent dosage titration, and pharmacovigilance, they expressed doubt as to how well doctors were doing this. They felt the current nature of health care, both within the hospital and community settings, was not conducive to detailed and individualised patient care, as seen to be necessary here. Consequently, nurses felt the barriers to warfarin use included not only the patient-related characteristics, but also the lack of support services in the community to assist patients. They themselves felt prescribers could make greater use of existing allied health services (nurses and pharmacists), particularly within the community.

Unlike previous studies, this research acknowledges that the use of warfarin involves players other than just the prescriber and patient. Nurses are often the interface for medication-related problems, and as such should also play an important role in the administration and monitoring of warfarin therapy. This is often overlooked, but is pertinent in view of anecdotal requests for increasing the role of allied health care professionals. Acknowledging that many individuals are involved is a prerequisite for understanding that there are a multiplicity of perceptions and experiences relating to warfarin use.

LIMITATIONS OF THE STUDY

As in all qualitative studies, the researcher has less control over data collection since participants must be allowed to interact with each other. In some cases an emerging *'group culture'* may interfere with individual expression and then *'group-think'* occurs (Frey and Fontana 1994). Therefore, there may be some uncertainty as to whether the identified themes actually describe the participants' true opinions (Krueger 1997).

Further, participants may have been 'steered' into particular points of view if they felt any of the researchers maintained *'strong ideological predispositions'*. However, careful planning and moderation of the focus groups should have prevented this. The ability to generalise in relation to these findings for a whole population may be limited by the small numbers of nurses involved in this study, which may not represent the wider nursing profession.

CONCLUSION

Overall, nurses currently maintain a limited role in the anticoagulant therapy of elderly patients. In view of the many difficulties associated with warfarin use, such as patient characteristics, as well as the expressed lack of confidence in prescribing processes, there is scope for nurses to be more involved in decision making processes, for both long term monitoring and management, and to assist prescribers and patients.

Recommendations for practice

The limited engagement of nurses in this clinical area is surprising and somewhat disappointing. Further education to increase nurses' knowledge about warfarin therapy, and pharmacology in general, as well as the development and implementation of multidisciplinary interventions involving nurses to ensure appropriate hospital-based prescribing and post-discharge management, is needed. Encouragement of nurses to take on more pro-active roles in this area is also warranted.

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