PHARMACY OF YOUR CHOICE SCHEME AND MANAGEMENT OF HYPERTENSION

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Abstract

Objective The aim of this project was to assess pharmacist intervention in patients suffering from hypertension to improve management of their condition by identifying risk factors, evaluating side-effects, monitoring, assessing drug-drug interactions and providing advice to help control blood pressure.

Method Two questionnaires were used in the study; the first questionnaire intended to identify drug-related problems and risk factors and a second questionnaire was developed as a shorter version of the first questionnaire. The questionnaires were used on 3 occasions when the patients came to collect their Pharmacy of Your Choice (POYC) medications from a local community pharmacy. The first questionnaire was used at time=0 (visit 1) and the second questionnaire was used twice, at t=2 months (visit 2) and t=4 months (visit 3). Blood pressure and pulse readings were recorded each time and patients were referred in cases of abnormal readings and in cases of interactions or side-effects. Advice was given to the patients on all the 3 occasions and any care issues were addressed.

Key findings Out of the 35 patients who participated, initially 22 patients were hypertensive. This number decreased to 20 patients at t=2 months and 16 patients at t=4 months. Abnormal pulse readings were initially found in 7 patients that in the subsequent visits decreased to 4 patients with 2 patients being investigated. The need for patient referral decreased from 24 patients at t= 0, to 21 patients at t= 2 months and 17 at t= 4 months.

Conclusion Pharmacist intervention in patient monitoring of chronic conditions supported patients in managing their blood pressure. Several comorbidities and mortalities can be reduced when the patient is regularly monitored by a pharmacist and any drug-related problems identified, addressed and patient is referred as necessary.

Keywords Community pharmacist intervention, hypertension, POYC, patient monitoring, care issues.

Introduction

Hypertension remains one of the major and most common health conditions in the world leaving a large and direct impact on the patient and on each country's health system. Hypertension accounts for "more than 5.8% of total deaths, 1.9% of years of life lost and 1.4% disability adjusted life years all over the world and less than 20% of patients have their blood pressure under control".[1] It is estimated that there are more than 1 billion people suffering from hypertension worldwide.[2]

Recently, new target blood pressure readings have been introduced causing an increase in the reported number of untreated patients or mismanaged patients.[3] It is estimated that the number of patients with poor blood pressure control has increased to 72%.[4] This strongly emphasises the importance of the intervention of the pharmacist who, through for example the Pharmacy of Your Choice (POYC) scheme, will be in a better position to support patients in chronic disease management. The pharmacist in primary care is in an ideal position to ensure that the patient is well managed and correctly taking medications as prescribed. Pharmacists can regularly monitor patients' blood pressure when they visit the community pharmacy or clinic, helping them to improve management of their blood pressure and identify any drug-related problems. Patients who are not being appropriately managed can be referred and any mismanagement issues and errors, including dosing errors and irrationalised treatment can be identified and addressed immediately.

In these scenarios, patients are monitored regularly through the continuous direct intervention of pharmacists who are the most accessible healthcare professionals in the community.

The aim of this study was to assess pharmacist intervention in patients suffering from hypertension to improve management of their condition by identifying risk factors, evaluating side-effects, monitoring, assessing drug-drug interactions and providing advice to help control blood pressure.

Method

Approval from the University of Malta Research Ethics Committee, POYC management and from the owner of the community pharmacy selected for the study was sought. Patients who came to collect their POYC medication from the pharmacy were approached and asked whether they were willing to participate. Patients were given a letter prior to study initiation where the aims of the study were explained and those accepting to participate were requested to sign a consent form.

Thirty five patients participated in the study by completing the first questionnaire. In this questionnaire completed at time 0, risk factors for hypertension were identified, Body Mass Index (BMI) was calculated, blood pressure and pulse readings were taken twice and an average was calculated and recorded, treatment was noted and side-effects were identified. Any drug interactions were also noted after a thorough drug history was taken for each patient. Blood pressure was taken after the patient had been at rest for at least ten minutes and the arm with the highest reading was used at throughout.

Patients repeated the second questionnaire 2 and 4 months later when their POYC medication was due to be collected again. This questionnaire was a shorter version of the first one and was used to obtain BMI, blood pressure and pulse readings and any changes in the pharmacological treatment since the previous meeting. Any problems and drug interactions were noted once again. Blood pressure, pulse readings and BMI were documented on a patient card to maintain a record and for easy follow-up by another healthcare professional in the future.

Patients who had abnormal blood pressure readings or pulse readings or who experienced severe side-effects were referred to their physician. Verbal advice was also given to patients especially during the first meeting where risk factors were being assessed and when directions about treatment were required. The data was evaluated after all the patients completed the questionnaires during the 3 visits.

Results

Thirty five patients participated in the study out of which 16 were male and 19 were female. The average age of the patients was 60.5 years (range 45 to 76 years).

Patients' BMI showed that most patients were obese (n=25), 8 patients were overweight and only 2 patients had a normal weight. Patients' weight range was recorded as 55 to 140kg at time 0 and 52 to 140 kg at time 4 months.

When risk factors were assessed, it was found that obesity was the highest risk factor with 33 patients, followed by a family history of cardiovascular disease in 25 patients and high blood cholesterol levels in 24 patients. Smoking was found to be a risk factor in only 3 patients while alcohol intake was a risk factor in 2 patients. Seventeen patients reported that they were not exercising, not even for half an hour once a week. Thirteen patients admitted to have a diet with a high salt intake (Figure 1).

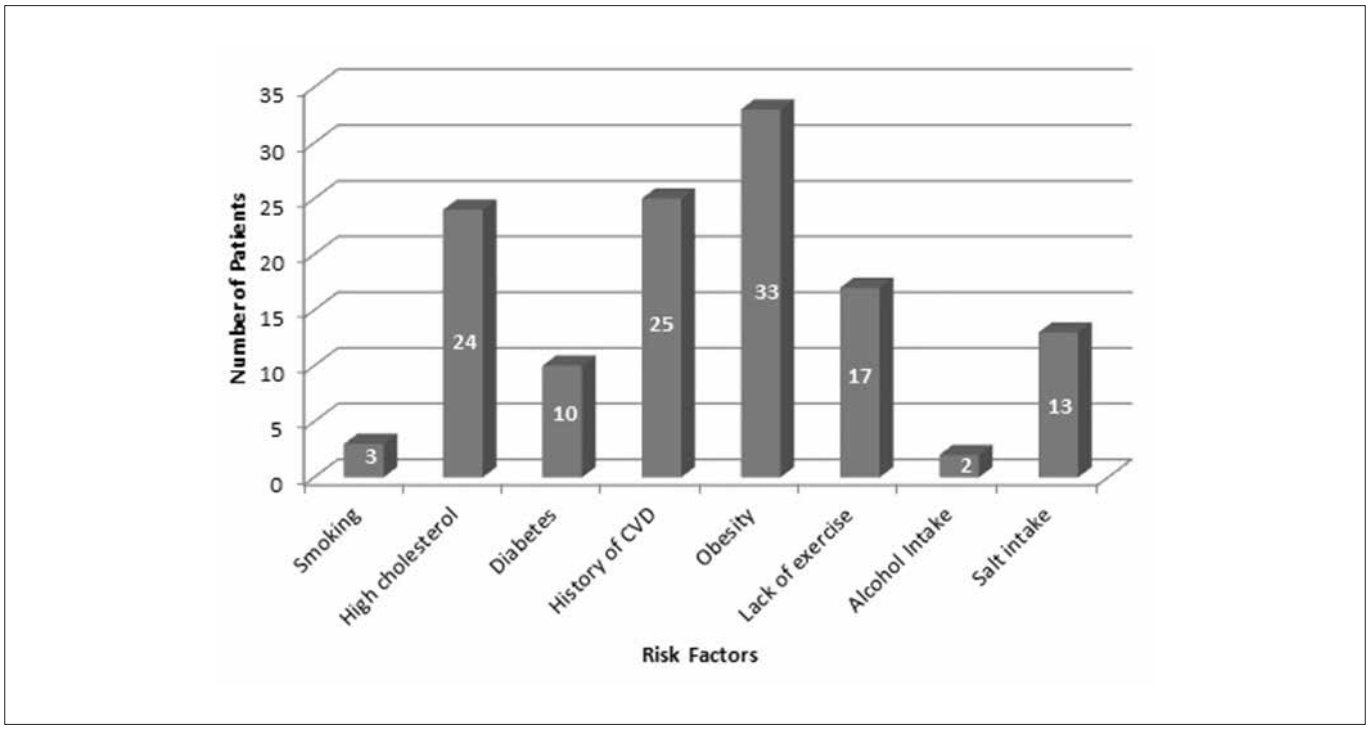

Figure 1: Risk factors identified amongst patients (n=35)

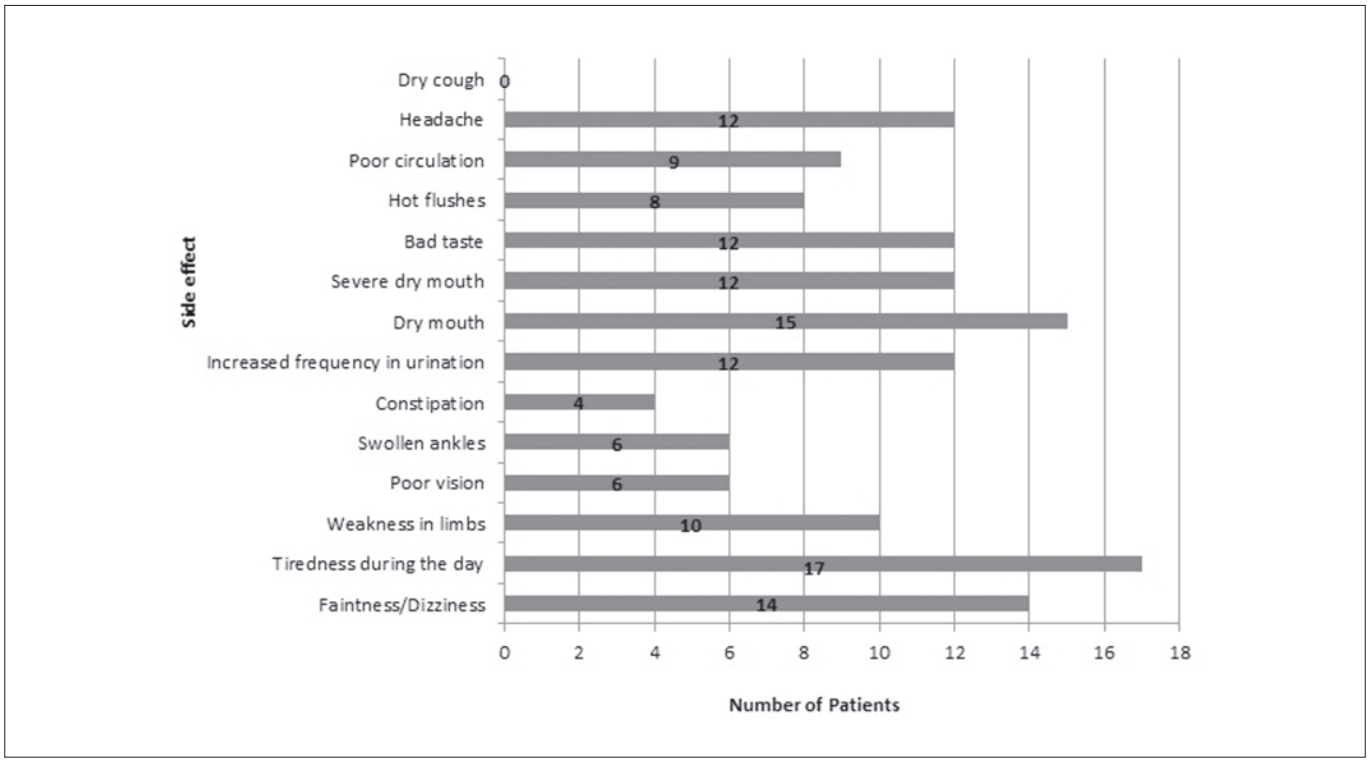

Figure 2: Side effects reported by patients (n=35)

The most common treatment option (28 patients) was an angiotensin-converting enzyme (ACE) inhibitor or angiotensin-II receptor antagonist (ARB) with most patients also taking another drug in (20 patients). The most common combination was with diuretics (7 patients). As a result of the pharmacist interventions and the subsequent referrals there were 8 patients who had their treatment plan modified. In 4 patients, an increase in dose between t=0 and t=2 months was implemented, 3 patients had an increase in dose between the t=2 and t=4 months and 1 patient had a treatment modification from an ACE inhibitor to an ARB due to development of side-effects between t=2 and t=4 months.

Side effects reported by patients included daytime fatigue (17 patients), followed by dry mouth (15 patients) and faintness and dizziness (14 patients) (Figure 2).

Despite receiving treatment, 22 patients presented with high blood pressure values during the first visit, 20 patients during the second visit and 16 patients during the third visit. Seven patients also had abnormal pulse readings on the first visit while 4 patients had abnormal pulse readings on the second and third visit. Two of these patients were being investigated because of their high pulse readings. Following patient monitoring, the need for patient referral decreased throughout the 3 visits; from 24 patients at t=0, to 21 at t=2 and 17 at t=4 months.

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Discussion

Similar to published studies, results show that pharmacist intervention helped patients in the normalisation of blood pressure and pulse results.[5] This study demonstrates how pharmacist intervention and extended professional services could be included in the POYC scheme to impact on rationale management of hypertension. The pharmacist helped in monitoring patients over a period of four months, ensuring that the patients are taking their medication correctly as prescribed and referring patients in cases of irrational treatment, in cases where the condition is not being successfully managed and in cases where other drug-related problems were identified. Despite the fact that patients had been on long-term treatment, a number of them were still uncontrolled whilst the majority were not having their blood pressure regularly monitored. This reflects the need for frequent pharmacist interventions when patients are collecting their POYC medication every two months. Using such a scheme ensures that there is a constant, regular contact with patients, on-site monitoring, immediate referral when required and increased compliance.

There are numerous benefits of involving a pharmacist in the management of hypertension including reduction in co-morbidities and mortality and avoidance of complications, requiring prolonged hospital admissions and additional treatment. Thus, it would be more cost-effective to involve pharmacists in the management of patients with hypertension to decrease or avoid emergencies and hospitalisations. Locally, the pharmacist is very accessible and patients can easily consult their pharmacist to monitor their blood pressure. In so doing, they would avoid having to be referred to a physician or having to wait long hours at the health centre to check their blood pressure. The pharmacist can spend more time with the patient in cases of problems and queries leading to better communication and ultimately improved compliance. Patients with chronic conditions have more contact with the community pharmacists than any other healthcare professional.[6]

Limitations of the study were the time framework since monitoring could be extended over a longer period of time and a small sample size since the number of patients willing to complete the study over the four months was limited.

Conclusion

Hypertension management by pharmacists improves outcomes in blood pressure control and in communication with the patient. Considering all the recent updates in guidelines, the number of patients suffering from hypertension may rise, thus, increasing the need for awareness and for more pharmacist-led patient monitoring. This will provide a cost-effective scenario since by rigorous monitoring, hospital admissions, morbidity and mortality are reduced, thus decreasing both direct and indirect costs.

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