Community Medicine

Hypertension control in the community – an Israeli experience

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Introduction

In Israel, as in other developed countries, hypertension is a mass problem. During the past 10 years it has become appreciated that hypertension should be actively sought, followed up and, if necessary, treated.

Hypertension generally exists in an asymptomatic form and screening for hypertension is needed to commence treatment at an early phase (Kottke *et al.*, 1979).

Doctor-nurse team in primary care clinics

Since 1977 nurses have been actively involved in the follow-up of hypertensives in over 400 community primary care clinics throughout Israel (Silverberg *et al.*, 1982). Doctors and their nurses were taught how to set up a hypertension detection and follow-up programme. The course included epidemiology, pathophysiology, blood pressure measurement techniques, dietary counselling on low calorie intake and sodium restriction and other ways of non-pharmacological and pharmacological control by help of a stepped-care programme.

An extensive health education course on cardiovascular risk factor control was prepared by the department of medical education of the Kupat Holim sick fund. This course, consisting of a programme of slides and booklets, is the basis for health education on this subject in primary care clinics, at the work site and at community centres in Ashkelon and Kiryat Gat.

Integration of hypertension control in primary and secondary care systems

In 1978, several hypertension units at various hospitals initiated large scale hypertension detection and

follow-up programmes in Naharya (Northern Israel), Tel-Aviv and Northern Negev area, including Ashkelon, Kiryat Gat and Beer Sheva. The framework of each programme consisted of:

- (a) a team of general practitioner and nurse,
- (b) a consultant of the hypertension service of the regional hospital, who visits the primary care clinics on a regular basis in an advisory capacity, and
- (c) hypertension clinics at the hospital.
- (d) Community centres for cardiovascular factor control.

Each general practitioner and nurse team participating in this programme pledges to measure blood pressure of 5 patients aged between 20–60 y, each day. Patients with a blood pressure below 140/90 mm Hg are re-examined after 2 y. Individuals with a blood pressure of 160/95 mm Hg or higher will be re-examined on two different occasions within a 2 week period, and if necessary, non-pharmacological control of hypertension [low calorie (Reisen *et al.*, 1978) or low salt diet, smoking cessation] was started followed by pharmacological treatment if blood pressure remained elevated after a 2 month period of non-pharmacological control. However, in patients with hypertension and target-organ damage when first seen, pharmacological treatment was initiated without delay.

The rationale of establishing community centres as an adjunct to disease control was based on the fact that both primary care and hospital clinics carry a heavy patient load, prohibiting prolonged doctor-patient contact. The inherent concept of the community centres, on the other hand, is to provide a relaxed and tranquil atmosphere that is conducive to patient guidance and behaviour intervention. The two such centres at Ashkelon and Kiryat Gat in the northern Negev region were established with the support of local public non-profit-making organizations (Viskoper & Silverberg, 1985). The main purpose of these

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community centres is to promote health education, screening for cardiovascular risk factors, non-pharmacological control of hypertension, and to act as a compliance unit. A physician, nurse, dietician and psychologist supervise the non-pharmacological treatment. They regularly give explanatory talks in the centre and transfer their work into the field by visiting worksites, schools (where they come in contact with both pupils and their parents) and neighbourhood social clubs. The main topics of the field talks are risk factors of cardiovascular disease, such as smoking, inappropriate nutrition and stress. Surprisingly, the audience becomes particularly interested when these topics are presented in the context of improved body function and mental health. Screening starts immediately after the talk. It should be noted here, that the overwhelming majority of the audience is invariably eager to be examined. Height, weight, blood pressure, smoking habits, and family history of cardiovascular disease, diabetes and hypertension are recorded on a scored screening chart. The information is graded from 0 to 2 points, the maximal possible score being 10. A subject receiving between 6 and 10 points is considered a high risk case and is referred to the community centre for non-pharmacological treatment. Concomitantly, his family physician at the primary care clinic is notified.

Health instruction and cardiovascular risk factor detection in the community

Both in Naharya and in Ashkelon and Kiryat Gat, paramedical personnel and volunteers were trained to instruct adults in various community centres and at the work site. The main topics of instruction are how to prevent cardiovascular disease with special emphasis on healthy life style, smoking cessation and healthy diet, and stress management strategies. Subsequently, body weight and height, pulse and sitting blood pressure of each instructed person are measured and the information is graded from 0–10 points, as above. In Ashkelon, a township with well developed volunteer programmes, health teams were established in six districts. In addition to general instruction and hypertension screening these teams were helpful for the referral of interested persons for health instruction given by professionals such as dieticians and psychologists.

The results to date

Hypertension control

At the end of the first 2 years of the programme, during which period the consultant paid frequent visits to the

primary care clinics, hypertension was controlled in 92% as compared to 43% before initiation of the programme. Over the next 2 y period, however, this level of hypertension control could not be maintained and it fell to 73%. This regression may be attributable to a less vigorous contact between the consultant and the primary care clinics.

Cardiovascular risk factor control

Of the 4,850 subjects (aged between 20 and 60 y) who were examined at the worksite or in public places, 15% were found to have a blood pressure above 160 and/or 95 mm Hg, and 25% had a pressure of more than 140 and/or 90 mm Hg. Among the population examined (1904 subjects), 10% were heavy cigarette smokers and 3% were severely overweight. According to the risk factor grading scores, 13% were considered high risk cases (6–10 points out of 10). After 6 months of non-pharmacological and/or pharmacological treatment, blood pressure was lowered in 65% and overall overweight was reduced by 20%.

Sixty nine severely overweight people (more than 40%) with hypertension were put on 1,000 calorie diet and were followed for 6–24 months. Their average weight reduction was 8.1 ± 1.3 kg. Systolic blood pressure decreased from 157.3 ± 4.0 to 140.1 ± 4.6 mm Hg ($P < 0.005$) and their diastolic blood pressure was reduced from 101.1 ± 3.8 to 86.1 ± 2.9 mm Hg ($P < 0.005$).

What has been achieved and what of the future?

Hypertension is a frequent and almost ubiquitous condition occurring in large parts of the community. It is one of the main risk factors of cardiovascular complications and its early detection and treatment may prevent these complications (Hart, 1983). Without doubt it is related to health habits of the community such as caloric intake and sodium and potassium content of diet, smoking habits, physical exercise and stress.

What did we achieve with the hypertension control programme described here? Primary care clinics were stimulated to take greater interest in hypertension detection and control. It must be said that there was some initial resistance on the part of the physicians and nurses of these clinics who had to be convinced of the importance of such a programme. However, after the positive response of the patients, the doctor-nurse teams accepted the rules of the protocol, and this was reflected in the satisfactory results of the control of hypertension.

The ongoing contact between the consultant of the hypertension service of the regional hospital and the primary care clinics turned out to be of crucial

importance for the success of the programme. When this contact became less intense the rate of hypertension control dropped from 92% to 73%.

During the 5 y of the programme the percentage of estimated hypertensives under treatment increased from 30% to 55%. Hypertension control was once for the relatively few moderate to severe hypertensives. Today hypertension control also means an active search for the asymptomatic hypertensive or hypertension-prone subject.

Non-pharmacological methods to achieve blood pressure reduction may cause a modest decrease in blood pressure. This may be adequate to prevent hypertension in hypertension-prone subjects or to cause normalization of elevated blood pressure in the larger groups of mild hypertensives (Beevers, 1983). The basis of non-pharmacological control to prevent

hypertension is a change of daily lifestyle. In order to achieve this one should change the health attitudes of the community. A patient will be likely to change his daily life style to an extent accepted by the community. The community centres for prevention of cardiovascular disease appeared helpful in enhancing public awareness. As a result of the experience gathered by them, a similar programme may be executed in the primary care units as a joint project of the Kupat Holim general sick fund and the civic organisation of prevention of high blood pressure in Israel. Stress management and enhancement of physical activity are used to increase the feeling of well being and are conducive to enhanced compliance to dietary regimen and smoking cessation. In our experience, these subjects are likely to arouse public interest necessary to achieve the desired change in daily life style.

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