

The Use of Accepted Preventive Medicine Practice among Elderly Patients in Community Clinics in the Jerusalem Area

Amnon Lahad MD MPH¹, Valentin Anshelevitz MD², Moshe Sonnenblick MD² and Tzvi Dwolatzky MD MBBCh²

¹Department of Family Medicine, Hebrew University of Jerusalem, Jerusalem, Israel

²Department of Geriatrics, Shaare Zedek Medical Center, Jerusalem, Israel

Affiliated with Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer Sheva, Israel

Key words: prevention, guidelines, primary care, elderly

Abstract

Background: With the aging of the population and the increase in the number of elderly patients under the care of primary care physicians in the community, it is essential that the physician be aware of the preventive medicine recommendations for this group of patients. Accepted evidence-based guidelines have been developed for the older patient and adherence to these guidelines may play a significant role in decreasing morbidity and mortality in the elderly.

Objectives: To determine whether elderly patients in community clinics are aware of the preventive medicine practices that are relevant and available to them, and to assess which factors influence their decision to use such interventions. Of particular interest was to evaluate the role of the doctor-patient relationship on the degree of patient compliance with preventive procedures.

Methods: Patients attending community clinics of the Clalit Health Services in Jerusalem were interviewed. Background information was obtained and the patients were questioned regarding the use of the following preventive medicine recommendations: screening for occult blood in the stool, testing of vision and hearing, influenza and pneumococcal immunization, thyroid-stimulating hormone testing, digital rectal examination for prostate cancer, and calcium supplementation. The patients were questioned regarding the use of aspirin or oral anticoagulation where relevant. Factors influencing their level of compliance were examined.

Results: The study group comprised 205 patients with an average age of 74.5 years. Overall the rates of compliance were high, with 78% undergoing visual assessment, 87% fecal occult blood testing, and 81% influenza immunization. Pneumococcal immunization had been administered to 49% of those interviewed and 56% had their hearing tested. Digital rectal examination had been performed in 45% of patients. Calcium supplementation was used in 60% of patients. Almost all the patients (91–100%) noted that the physician had initiated the procedure and that non-compliance was due to patient preferences. Of the 172 patients who were assumed to benefit from aspirin use, 153 (89%) used the medication, and 87% of 23 patients with atrial fibrillation were on chronic anticoagulation.

Conclusions: A high level of compliance with preventive medicine recommendations was found among this group of elderly patients. The doctor-patient relationship had a positive effect on the patients' compliance.

IMAJ 2003;5:352–355

this change, with preventive medicine interventions playing as important a role as the advancements in treating established disease.

The primary care physician plays a major part in making his patients aware of accepted preventive medicine practices, which may differ according to patient characteristics, such as age, gender and geographic location. Evidence-based guidelines have been developed in order to assist the physician in the practice of preventive medicine. Such guidelines relevant to the older population include those of the United States Preventive Services Task Force [2] and the Canadian Task Force on the Periodic Health Examination [3]. The Israel Medical Association published its recommendations for prevention in the community in 2000 [4].

Based on these and other accepted guidelines and recommendations [5], the interventions that are of probable benefit in the population older than 65 years include the following: annual measurement of blood pressure, stool test for occult blood, annual breast examination by the physician, mammography every 2 years (with upper age limitation), periodic assessment of vision and hearing, calcium supplementation in women, annual influenza vaccination, and pneumococcal vaccination at least once after age 65 years. Interventions that may have some value in prevention include an annual blood test for thyroid-stimulating hormone and blood cholesterol level (up to age 75 years). Digital rectal examination for colorectal or prostate cancer is still controversial. Also, the use of aspirin in secondary prevention as well as anticoagulant therapy in chronic atrial fibrillation is of definite benefit. Regular exercise is clearly beneficial in the prevention of disease and disability in the elderly.

The purpose of the present study was to determine whether elderly patients in community clinics were aware of the preventive medicine practices that were relevant and available to them, and to assess which factors influenced their decision whether to use such interventions. Of particular interest was to evaluate the effect of the doctor-patient relationship on the degree of patient compliance with preventive procedures.

Patients and Methods

Setting

The study was performed among elderly members of the Clalit Health Services in the Jerusalem area. This is the largest of four such health services in Israel and provides care to 420,000 people in the Jerusalem district, this being about 55% of the total population

Life expectancy has risen progressively in the developed world over the past century. In Israel life expectancy for women in 1998 was 80.3 years and for men 76.1 years. This reflects an increase of 5 years for females and 4.3 years for males over the past two decades [1]. Medical practice and policy have contributed significantly to

of Jerusalem. The percentage of Jerusalem residents over the age of 65 years enrolled in Clalit is 12%, as compared to approximately 8% in the population of Jerusalem [Clalit internal data]. Clalit insures over 75% of the elderly population in Jerusalem, and provides most of its services in community clinics, with between two and seven physicians providing care at each clinic. We selected eight such clinics representing the various socioeconomic and religious subgroups of the Jewish population. In addition, the clinics were chosen to include an equal number of general practitioners and physicians who were specialists in Family Medicine. Pediatricians were excluded. At the time of the study no geriatricians were employed in the primary care setting.

Patients

Patients above the age of 65 years who were attending their regular community clinic were chosen randomly to participate in the interview. The patients were interviewed either before or after their visit to the physician. A single physician (V.A.) interviewed all of the patients. Missing and additional relevant data were obtained from the patient's medical chart. A total of 25 patients per clinic was selected, with equal numbers from each of the primary care providers. Permission for participation in the interview was obtained from both the patient and his or her physician.

Methods

Information was obtained regarding the patient's age, ethnicity, education level, social status, health habits, chronic diseases, general well-being, and doctor-patient relationship. The patient was questioned regarding the use of the following preventive medicine recommendations: screening for fecal occult blood testing, testing of vision and hearing, influenza and pneumococcal immunization, TSH testing, DRE for prostate cancer, and calcium supplementation. Patients with ischemic heart disease, diabetes mellitus or cerebrovascular disease were questioned about the use of low dose aspirin, and patients suffering from atrial fibrillation about the use of oral anticoagulation. Information was ascertained as to who had recommended the intervention to the patient and, in cases where the intervention had not been performed, what the reasons were for this lack of compliance. The patient was also asked about the degree of contact with family members (usually the offspring) other than the spouse.

Statistical analysis

The dependent variable was the performance of the preventive intervention. Independent predictors were the background characteristics of the patient and the physician, and the doctor-patient relationship. In the univariate analysis for the predictors of using an intervention we used a Student *t*-test for continuous variables and the chi-square test for categorical variables. To control for potential confounders, a logistic regression model was employed. All tests were two-tailed.

TSH = thyroid-stimulating hormone

DRE = digital rectal examination

Results

Background characteristics

Altogether, 205 patients were interviewed and all patients completed the questionnaire. Fifty-five percent were males, the average age was 73.7 ± 7.2 years, and the average years of education were 10.3 ± 4.5 . Marital status included 66% who were married, 29% widowed and 5% single. Those born in Israel represented 25% of the interviewees, with a further 36% having originated from Asia and North Africa, and 39% from Europe and the Americas.

There was a high rate of chronic medical conditions among those interviewed. Eighty-four percent suffered from hypertension, 64% from ischemic heart disease, 34% from chronic obstructive lung disease, 33% from osteoporosis, 17% from diabetes, 1.5% from malignancy, 22% from glaucoma, 15% from cataract, and 14% used a hearing aid. Nineteen percent were smokers and 8% used alcohol daily. The relationship with family members was positive, with 56% of interviewees reporting daily contact with a family member and only 24% of the participants meeting family members less than once a week. Eighty-four percent graded their relations with their doctor as good and 16% as average. Of note is that no patient graded this relationship as poor.

Compliance with preventive procedures

Overall the rates of compliance were high, with 78% undergoing visual assessment, 87% occult blood testing, and 81% influenza immunization. Pneumococcal immunization had been administered to 49% of those interviewed and in 56% hearing had been tested. Digital rectal examination had been performed in 45%. Calcium supplementation was used in 60% of patients. In almost all cases (91–100%) the patients noted that the physician had initiated the procedure and that non-compliance was due to patient preferences.

Of the 172 patients who were assumed to benefit from aspirin use, 153 (89%) used the medication, and of 23 patients with atrial fibrillation, 87% were on chronic anticoagulation.

Predictors for use of preventive measures

The predictors for the use of preventive measures were ascertained using logistic regression and controlling for patient background characteristics. The results are summarized in Table 1.

Discussion

The study population represented a specific subgroup and was not a random sample of the elderly population of Jerusalem. Due to a limitation of Clalit Health Services we were only able to interview patients at the time of their clinic visit and with the approval of their primary care physician. Therefore, those studied represented a group of elderly patients who were functionally able to attend a community clinic and who were possibly more frequent users of community health services. The rate of older men to women in our study population was 1.22 and this was significantly higher than the reported rate of 0.75 in the Jewish population in Israel in 1999 [1].

The study participants had a high rate of co-morbidity, with 84% suffering from hypertension compared to 24–40% reported by the Israel Bureau of Statistics [6] and 50% in a representative sample of

Table 1. Positive predictors for the use of preventive medicine recommendations*

Recommendation	Predictor	Odds ratio	P value
Occult blood testing	Doctor-patient relationship	5.1	0.009
Digital rectal examination	Doctor-patient relationship	6.2	0.003
	Education	1.2**	0.001
	Diabetes mellitus	3.6	0.025
Vision	Education	1.1**	0.03
Hearing	Age	0.93	0.004
Influenza vaccine	Heart disease	2.1	0.03
Pneumococcal vaccine	Education	0.9***	
Calcium supplementation	Female gender	9.2	0.001
	Osteoporosis	2.2	0.05

* The predictors for the use of preventive measures were ascertained using logistic regression and controlling for patient background characteristics.

** Odds ratio per year of education

*** Negative predictor per year of education

70 year old residents of Jerusalem [7]. The self-reported prevalence of ischemic heart disease was 64% as compared to 20–30% in the Israeli elderly [6]. Based on medical data relating to 70 year old patients in Jerusalem, 24.3% of men and 19.0% of women were reported having previously suffered a heart attack [8]. Only for diabetes mellitus was the prevalence of 17% in the study patients similar to that of those aged 65–74 years in Israel. The majority of those studied (88%) graded their relations with their doctor as good, and this is probably also a reflection of the frequent utilization of physician care.

In this elderly population described we found a high rate of compliance with preventive recommendations, which is significantly higher than that reported in the literature. A number of studies in Israel have described the rate of fecal occult blood testing in different settings. Although physicians reported recommending FOBT screening for colorectal cancer in 96% of patients, results for this test were recorded in only 9.2% of patient files [9]. The rate of FOBT was found to increase in a clinic setting from 1.2% in 1999 to 6.7% in 2000 after an intervention was initiated to increase awareness [10]. The compliance rate in a different study was 14.3% [11]. In a study utilizing mailing to increase compliance, 17.9% performed the test [12]. In our study the compliance rate of 84% of patients who performed a FOBT probably reflects not only increased awareness by both the physician and the patient, but also the specific nature of the study group described. The rate of 81% of patients receiving influenza vaccine is higher than that described in a national population-based random telephone survey of 3,000 households, which found that the average rate of vaccination was 50% for the population aged 65 years and older [13].

Our data were obtained mainly from the patient interview and not necessarily by chart review, and thus they represent the rates of compliance reported by the patient. The validation of the accuracy of patient reporting by comparison with the patient charts would help to confirm our findings. However, this validation was not performed as we found that the reporting of preventive medicine

procedures in the patient charts was generally poor. This is due to the emphasis placed on the problem-oriented approach in recording that is used by most physicians.

The setting of the interview increases the likelihood that the patient will report a high rate of physician recommendation and high rate of patient compliance as this is conceived as “good medicine.” The high rate of morbidity of this population probably exposed these patients to more than the average number of physician visits and, as a result, to more preventive medicine practices.

We have shown that a good relationship between the patient and his/her physician has a positive effect on the performing of preventive recommendations. A previous survey found that the family physician is the main authority in recommending influenza vaccination, and that the absence of recommendation and a lack of faith in the efficacy of the vaccine were the main reasons for non-compliance [13]. In a telephone survey conducted among a random sample of patients aged 65 years and older at a Jerusalem primary care clinic, the most frequently reported factor influencing immunization was the recommendation of the physician. Immunization was independently associated with having visited the physician during the previous 3 months [14].

In this study we found high rates of compliance with accepted preventive medicine recommendations for the elderly patient in the community setting. This was true both for primary and for secondary prevention strategies. A positive relationship between the doctor and patient contributed significantly to this level of compliance.

Since the patients studied represent a limited segment of the older population, a further study should be performed to include a representative sample both of those elderly who visit the clinical setting and those who are registered as patients but do not attend the clinic. Results obtained from the patient interview should be validated by comparison with the patient records. Such a study would be valuable in further evaluating the use of preventive medicine guidelines in the elderly in Israel.

References

1. Health in Israel – selected data. Jerusalem: State of Israel Ministry of Health Publication, 2001:35–9.
2. U.S. Preventive Services Task Force Guide to Clinical Preventive Services. 2nd edn. Baltimore: Williams and Wilkins, 1996.
3. Canadian Task Force on Periodic Health Examination. Canadian Guide to Clinical Preventive Health Care. Ottawa: Communication Group, 1994.
4. Preventive medicine and health promotion practice in the community. Publication of the Scientific Council of the Israel Medical Association, 2000:27–31.
5. Goldberg TH. Preventive medicine and screening in the elderly: working guidelines. *Cleve Clin J Med* 2000;67:521–30.

FOBT = fecal occult blood testing

6. The state of health in Israel. Tel-Hashomer: Israel Center for Disease Control, 1997;202:219–26.
7. Bursztyn M, Shpilberg O, Ginsberg GM, Cohen A, Stessman J. Hypertension in the Jerusalem 70 year olds study population: prevalence, awareness, treatment and control. *Isr J Med Sci* 1996;32: 629–33.
8. Stessman Y, Ginsberg G, Maaravi M, Hanmerman-rozenberg R, Cohen A. Profile of Jerusalem's 70 year olds – medical data. *Isr J Med Sci* 1996;32:665–87.
9. Gilad A. Screening for colorectal cancer in Israel. The gap between guidelines and their implementation. MD thesis, Hebrew University Medical School, Jerusalem, Israel. February 1999.
10. Vinker S, Katz D, et al. Increasing the rate of preventive medicine measurements: fecal occult blood, mammography, and hepatitis B in the recommended target population. Presented at the Israel Family Medicine Association Annual Meeting, Jerusalem, Israel, May 2000.
11. Vinker S, Nakar S, Rosenberg E, Kitai E. The role of family physicians in increasing annual fecal occult blood test screening coverage: a prospective intervention study. *IMAJ* 2002;4:424–5.
12. Ore L, Hagoel L, Lavi I, Rennert G. Screening with fecal occult blood test for colorectal cancer: assessment of two methods that attempt to improve compliance. *Eur J Cancer Prev* 2001;10:251–6.
13. Kaufman Z, Cohen-Manheim I, Green MS. Compliance with influenza vaccination in Israel in two successive winters, 1998/1999 and 1999/2000. *IMAJ* 2000;2:742–5.
14. Abramson ZH, Cohen-Naor V. Factors associated with performance of influenza immunization among the elderly. *IMAJ* 2000;2:902–7.

Correspondence: Dr. T. Dwolatzky, Dept. of Geriatrics, Mental Health Center, P.O.Box 4600, Beer Sheva, Israel
email: dwolatzky@hotmail.com