Secondary prevention of osteoporosis among general practitioners

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SOUHRN

Blažková Š., Vytřísalová M., Štěpán J., Palička V., Býma S., Hála T., Vlček J.: **Sekundární prevence osteoporózy mezi praktickými lékaři**

Cíle: Praktičtí lékaři mají klíčovou roli v prevenci a léčbě osteoporózy (OP). Cílem této studie bylo zhodnotit jejich aktivity v sekundární prevenci OP.

Metodika: Analyzovali jsme dotazníkový průzkum realizovaný na vzorku náhodně vybraných praktických lékařů (PL) v České republice. Hodnotili jsme demografická data, vnímání důležitosti úlohy PL v boji proti OP, hodnocení rizika a management OP a jejich bariéry.

Výsledky: Návratnost dotazníků byla 38% (n = 525), průměrný věk respondenta byl 52 let. Frakturu jako důsledek osteoporózy zvažuje 91 % respondentů, ale více než polovina z nich pouze občas nebo výjimečně. Osteologickou etiologii zvažovali častěji kvůli věku pacienta a nepřiměřeně malému úrazu, který zlomeninu způsobil. Rizikové faktory OP (jiné než věk) uvádělo 70 % respondentů. Nejčastější aktivitou PL následující po fraktuře je odeslání pacienta ke specialistovi (82 %), doporučení úpravy životního stylu (64 %) a předepsání přípravků s vápníkem/vitamínem D (61 %). Méně než polovina PL uvedla snahu zajistit prevenci pádů.

Závěr: Praktičtí lékaři se účastní sekundární prevence osteoporózy, ale mohli by být více zainteresováni a mohli by mít větší povědomí o prevenci OP. Je důležité je motivovat, aby se stali aktivnějšími v managementu osteoporotických fraktur.

Klíčová slova: praktický lékař, sekundární prevence, osteoporóza, zlomenina

SUMMARY

Blažková Š., Vytřísalová M., Štěpán J., Palička V., Býma S., Hála T., Vlček J.: **Secondary prevention of osteoporosis among general practitioners**

Objectives: General practitioners (GPs) should play an integral role in the prevention and treatment of osteoporosis (OP). The objective of this study was to evaluate their activities in the secondary prevention of OP.

Methods: We analyzed a postal questionnaire survey among a randomly selected sample of GPs practicing in the Czech Republic. Information on demographic data, attitude to the GP's role in the fight against OP, OP risk assessment and management and their barriers were analyzed.

Results: The questionnaire return rate was 38 % (n = 525) and the respondents' mean age was 52 years. Fracture as a consequence of OP was considered by 91% of respondents, but by more than half of them only sometimes or exceptionally. Osteoporotic etiology was most often suspected because of the patient's age and of the fact that the fracture was caused by a relatively low impact. Risk factors (other than age) were reported by about 70 % of respondents. The most frequent GP post-fracture activity was referral to a specialist (82 %), recommendation for lifestyle adjustments (64 %) and prescription of calcium /vitamin D supplements (61 %). Less than half of GPs stated instruction on fall prevention.

Conclusions: GPs take part in the secondary prevention of OP, but they could be more deeply interested in and have greater awareness of the prevention of OP. It is important to motivate GPs to become more active in the management of OP fractures.

Keywords: general practitioner, secondary prevention, osteoporosis, fracture

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Introduction

Osteoporosis (OP) is an important health, economic and social concern for an ever increasing proportion of the elderly population. Fragility fracture is a major risk factor for the future event: following the first vertebral fracture, patients have a four to five times increased risk of experiencing subsequent fracture within the next year [1]. In the light of this fact, the national OP guidelines (including the Czech ones) recommend specific treatment not only in women with OP values of BMD but also in those with a history of OP fracture [2]. A history of fracture is also one of the input variables for the FRAX tool that predicts the ten-year risk of fracture after entering a patient's clinical risk factors and femoral neck BMD if available [3,4].

Effective therapeutic options that reduce by about half the risk of fracture are currently available in routine clinical practice [5]. However, at eight months after fragility fracture, adequate treatment is provided to as few as 16 % of women [6] and 10 % of men [7] in Canada, 20 % of women [8] in the USA and 18 % [9] to one third of women [10] in Australia.

The objective of this study was to evaluate the activities of general practitioners (GPs) in the secondary prevention of OP.

Methods

We analysed data from a two-round postal questionnaire survey. The addressed GPs were a randomly selected sample of GPs practicing in the Czech Republic. A four-page questionnaire (including a cover letter) with multiple choice questions was distributed in 2007. The questionnaire collected information on demographic data, attitude to the GP's role in the fight against OP, OP risk assessment and management and its barriers, knowledge of OP and sources of information. The method has been described in detail elsewhere [11].

Knowledge of OP was assessed using 21 items (mostly with two response alternatives) that covered general information and essential risk factors, epidemiology, prevention and consequences. Each correct response scored one point. The total osteoporosis knowledge score was used as a continuous variable in statistical analysis.

Statistical analysis

The results are given as valid percentages of the number of respondents (N) who answered the given question. To investigate the associations between variables, Kendall correlations for two continuous (ordinal) variables and Mann-Whitney test for dichotomous and continuous (ordinal) variables were used. $P < 0.05$ was considered statistically significant.

Results

As has been published in more detail, the questionnaire return rate was 38 % (525 respondents, mean age 52 years, 61.5 % of women). The demographic data are listed in Table I. Only 7 % of respondents rate the GP's role in the fight against OP as small, the remaining part rate the GP's role as either medium (56 %) or essential (38 %). The mean knowledge score was 12.2 ± 3.3 of 21 possible points [11].

When facing a patient with fracture, OP as a cause is considered by 91 % of respondents: 9 % of them always consider OP as a cause of fracture, 31 % do so often, 55 % sometimes and 5 % exceptionally. The cause of OP is considered more often by the GPs who rate their role in the fight against OP higher ($p = 0.009$).

The reasons for suspecting OP fracture are listed in Table II. OP fracture is suspected because of a relatively low impact that caused the fracture, patient's age and risk factors more often by the GPs with a higher knowledge score ($p < 0.001$ for each reason).

The steps taken by the respondents when facing a patient with fracture as a consequence of OP are reviewed in Table III. If the GP refers the patient to a specialist (82 % of GPs do so), most referrals are to an osteologist or orthopedist, followed by rheumatologist, internist or another specialist. Proactive management (fall prevention, prescription of calcium/vitamin D supplements, lifestyle changes and referral to a specialist) is most frequently reported by the GPs with a higher knowledge score ($p < 0.001$ for each activity). Fall prevention is most often recommended by male ($p = 0.004$) and younger GPs ($p = 0.008$).

Discussion

This analysis of activities within the secondary prevention of OP is part of a comprehensive questionnaire survey "Barriers to management of osteoporosis-related fractures among general practitioners". Some results have already been published [11]. It is the first attempt to map the attitudes of GPs towards the prevention, diagnosis and treatment of osteoporosis in the Czech Republic. Questionnaire survey is the only way, how to assess this topic.

Table I
Characteristics of the study population

age	N = 495
mean (range)	52 (30–83)
< 50 years (%)	33
50–60 years (%)	46
> 60 years (%)	21
Length of professional experience	N = 477
mean (range)	25 (1–53)
gender	N = 501
male (%)	38.5
female (%)	61.5
Community size	N = 499
< 2000 population (%)	16
2000–10 000 population (%)	31
10 000–100 000 population (%)	33
> 100 000 population (%)	20

Possible selection bias (the higher participation of GPs who are better acquainted with the studied area) is an expected limitation to our study. As has been described in detail elsewhere [11], the bias should not be too great. Some respondents could overrate their own activities.

OP as a cause of fracture is considered by most respondents, most frequently due to striking characteristics. Proactive post-fracture care is reported more often by GPs with a higher awareness of OP. Mean score of 12 of possible 21 points in the knowledge assessment should be considered as alerting in this context.

When facing a patient with fracture, OP as a cause is considered by most respondents (91 %), but more than half of them consider OP as a cause of fracture only sometimes. One of the possible reasons might be a lack of ownership of the responsibility for treating OP [12].

In the Czech Republic, the GPs readily prescribe calcium/vitamin D supplements. As antiresorptive (and osteoanabolic) drugs can only be prescribed by selected outpatient specialists, close collaboration between the GPs and these specialists is needed for the management of OP. Expectedly, OP as a cause of fracture is more frequently considered by the GPs who rate higher their role in the fight against OP. The most frequent reasons for suspecting an OP-related fracture (> 80 % of respondents) are the patient's age and a relatively low trauma that has caused the fracture, i.e. striking characteristics. Risk factors requiring a deeper analysis are reported by about 70 % of respondents.

In the assessment of the knowledge of OP, including the risk factors, the respondents obtained a mean score of 12 of possible 21 points. Improvement could be achieved by using simple tools such as FRAX for fracture risk assessment. Expectedly again, OP as a cause of fracture is suspected because of risk factors, a relatively low trauma and the patient's age most often by the GPs with a higher knowledge score.

According to the Czech OP guidelines [2], any patient after fracture should receive specific therapy which is covered, at least in part, by the health insurance company, when prescribed by a specialist. Nevertheless, referral to a specialist after OP-related fracture was only reported by 82 % of GPs in our survey.

More than 60 % of respondents recommend lifestyle changes and prescribe calcium/vitamin D supplements. In a similar survey conducted in Israel, 75 % of GPs recommended to patients after fracture that they should quit smoking, 57 % of GPs instructed them to increase physical activity, 39 % of GPs prescribed vitamin D and 51 % 1-alpha D3 [13]. In Australia, 24 % of patients after fracture reported to have been instructed to increase calcium intake and 33 % of patients were told to increase physical activity. Since the Australian survey addressed the patients, it is not clear whether these recommendations were actually given by the GPs [9]. Less than half of GPs report to provide instruction on fall prevention to patients after OP-related fracture; nevertheless, fall is often a cause of fracture and fall prevention should be an integral part of post-fracture care.

Expectedly again, proactive post-fracture care (fall prevention, prescription of calcium/vitamin D supplements, recommendation of lifestyle changes, referral to a specialist) is reported more often by the GPs with a higher awareness of OP (higher knowledge score, higher self-rating of the role in the fight against OP). Surprisingly, the instruction on fall prevention is more often provided by the male and younger GPs. A possible explanation is that these GPs more readily participate in various physical activities and thus are more aware of the risk of accidents including falls.

Table II
Question: On what grounds do you suspect osteoporosis as a cause of fracture? (multiple choice, please underline the most relevant option, if any): N = 525

	Yes (most relevant option), %
The suspicion/diagnosis has been reported by the specialist	36.8 (0.8)
The fracture was caused by a relatively low impact	83.5 (7.5)
Patient's age	83.9 (3.6)
Osteoporosis risk factors (other than age)	68.6 (4.0)
Fracture location	50.8 (1.3)
Other	5.4 (0)

Table III
Question: What steps do you take when facing a patient with a fracture as a consequence of osteoporosis? (multiple choice, please underline the most relevant option, if any): N = 525

	Yes (most relevant option), %
I provide instruction on fall prevention.	39.4 (0.4)
I prescribe calcium/vitamin D supplements.	61.3 (2.5)
I recommend lifestyle changes (appropriate diet, physical activity).	63.7 (2.5)
I refer the patient to a specialist, if not yet under follow up.	81.8 (4.0)
I take other steps.	2.7 (0)
The patient presents after full recovery and there is no need for intervention.	1.7 (0)
The patient is not likely to present for a post-fracture check-up and thus there is no opportunity for intervention.	2.1 (0)

As has been shown, the extent of the knowledge of OP has a significant impact on the post-fracture management. The knowledge has a positive effect on the GP's initiative. Education of GPs to raise their awareness of the issue is therefore essential, particularly in the light of the fact that a 57 % score was only obtained for the knowledge of OP. Nevertheless, a lack of knowledge is only one of the barriers to OP management in primary care and is not considered as the most important by the GPs [11].

Conclusion

General practitioners participate in the secondary prevention of osteoporosis. Their role could be emphasized because they are the first contact for patients. It could be achieved by closer cooperation between GPs and specialists, continuing education, implementation of simple fracture risk assessment tools into clinical practice (i.e. FRAX) and increasing ownership of the responsibility for treating OP by allowing prescribing specific treatment.

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