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A pet and bird shop owner in Taiwan gets vaccination for avian flu

petownership_stats.htm), and many pets are just as important as a family member or friend, sometimes more; for them, the same level of health care is expected. Cost of treatment and subsequent quality of life is an issue for the care of animals and humans.

Doctors may not fully appreciate the importance of the relationship between owners and their animals. This may be relevant when, for example, advising immunocompromised patients of any risk from their pets, or considering the implications of taking an elderly pet owner into care in an environment where animals are banned. When advising patients about owning pets, doctors now have to weigh up the risks of developing allergies.[2]

The *BMJ* and the *Veterinary Record* plan simultaneous publication of theme issues exploring how the two professions can collaborate for mutual benefit. We would like to cover topics such as the investigation and control of infectious diseases; zoonoses; medical and veterinary education; professional regulation; and issues related to pet ownership. The theme issues, to be published in November 2005, will be a mix of papers, debate pieces, editorials, and reviews. We are particularly interested in original research relevant to both disciplines. The deadline for submissions of original research is 30 May 2005.

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Competing interests: None declared.

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Treatment of postmenopausal osteoporosis

Has improved owing to the availability of many drugs that prevent fractures

Osteoporosis is characterised by bone fragility due to low bone mass and modifications of the internal bone structure, with alterations of its microarchitecture. Of various fragility fractures that represent the major complication of the disease, vertebral and hip fractures are associated with pronounced morbidity and increased mortality.[1] Several agents have been used for many years to prevent or treat osteoporosis. However, methodologically sound randomised controlled trials assessing their efficacy against fractures at the axial (vertebral) and appendicular (non-vertebral) sites have become available only in the last 15 years. Most of these trials were recently summarised in systematic reviews.[1–3]

Bisphosphonates are potent inhibitors of resorption and represent 70% of the worldwide market for drugs used to treat osteoporosis. Alendronate and risedronate were both investigated in well designed, randomised controlled trials, where their ability to reduce vertebral, non-vertebral, and hip fractures was shown—the latter mainly in women with severe osteoporosis (low bone density and prevalent fractures).[2–6] Both are widely available as daily or weekly oral formulations. No head to head comparisons between alendronate and risedronate have been made. Results of published randomised controlled trials or meta-analysis do not provide compelling evidence for statistically significant differences in their efficacy or safety. Both compare favourably with etidronate, the first bisphosphonate developed, which in the absence of an unequivocal effect on non-vertebral fractures seems outdated. Ibandronate reduces vertebral fractures, but its effect on non-vertebral fractures has so far only been shown in a post hoc analysis performed on a high risk subgroup.[7]

Selective oestrogen receptor modulators act as oestrogen agonists or antagonists depending on the target tissue. Raloxifene reduces vertebral fractures across different degrees of skeletal fragility, ranging from low bone density to severe osteoporosis,[8] but little evidence of efficacy in preventing non-vertebral fractures is currently available.[3 4 8] Major non-skeletal benefits have been documented (in breast cancer) or are under investigation (cardiovascular disease) and should be considered when assessing the overall risk to benefit ratio of selective oestrogen receptor modulators.

The efficacy of hormone replacement therapy against fractures has been derived mainly from case-control and cohort studies.[2] Although not conducted in women included on the basis of an increased risk of skeletal fragility, the women's health initiative trial,[9] a randomised controlled trial designed to assess the major health benefits and risks of the most commonly used hormone replacement therapy in the United States, reported a significant reduction in verte-

BMJ 2005;330:859–60

bral and all fractures. However, when considering the effects of hormone replacement therapy on all disease outcomes in a global model, the authors concluded that there was no net benefit even in women considered to be at the highest risk of fracture. Hormone replacement should be considered only in women experiencing climacteric symptoms, for the shortest possible duration, and with the lowest effective doses.

Teriparatide, a parathormone, predominantly stimulates bone formation when given intermittently. A randomised controlled trial conducted in women with severe osteoporosis showed reduction in vertebral and all non-vertebral (but not hip) fractures.[10] Since no data are available in less severely affected women, the use of parathormone should be limited to this particular population.

Strontium ranelate is a new chemical that inhibits bone resorption and concomitantly stimulates bone formation. Two large randomised controlled trials have shown the ability of strontium ranelate to reduce vertebral and non-vertebral fractures in women with low bone density with or without prevalent fractures. A reduction of hip fractures has also been documented in older women with very low bone density.[11 12]

Besides all these pharmacological agents, calcium and vitamin D should be a first line strategy for the management of osteoporosis. In view of the very low mean dietary intake of calcium in most developed and developing countries, a systematic pharmacological supplementation in postmenopausal women seems to be an appropriate strategy—unless an individual's dietary assessment shows a satisfactory intake. The high prevalence of vitamin D deficiency in older people (independently of the level of daylight or sunshine exposure of their country) combined with the low marginal cost of calcium and vitamin D supplementation compared with calcium supplementation alone indicate that after the age of 65, calcium and vitamin D should be offered to all postmenopausal women, either alone or, if needed, with another therapeutic regimen.

The management of osteoporosis has improved in the past 10 years with the availability of new drugs with proved efficacy against fractures. In daily practice, the decision to select a particular therapeutic option will depend on the stage of the disease and the respective risk of vertebral and non-vertebral fractures. It will also take into account the documented skeletal and non-skeletal benefits of the medication. What we need now is research to assess the cost effectiveness of the various medications in every clinical condition.

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Competing interests: None declared.

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