Transcript of learning module Osteoporosis: fracture prevention and treatment in primary care

(Dur: 20' 18")

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Voiceover: You’re listening to an audio module from BMJ Learning.

Christine: Hello I’m Dr Christine Ward a clinical editor at BMJ Learning and part time GP in Hampshire. In this audio module we discuss osteoporosis and here to talk us through the causes, treatment, and management is Dr Alan Cooper who is a GP in West Sussex and Trustee of the National Osteoporosis Society.

Many thanks for speaking to us.

Alan: It’s a pleasure.

Christine: So to start off with could you tell us what is osteoporosis?

Alan: The WHO, the World Health Organization, in 1994 defined osteoporosis as a progressive systemic skeletal disease characterised by low bone mass. And that’s where the bone mineral density, the T score comes in. But it’s also micro architectural deterioration of bone tissue so it’s deterioration in
the micro architecture and increased bone turnover. And with a consequent increase in bone fragility and susceptibility to fracture. And that’s what it’s all about. It’s about the increased risk of fracture.

Christine: Okay. And how common is it?

Alan: Osteoporosis itself, in the UK about 1 in 3 women and 1 in 12 men will have osteoporosis but the important thing is that 1 in 2 women between being 50 and dying will have a fragility fracture and 1 in 5 men will have a fragility fracture.

In fact there are more people having a fracture with osteopenia than osteoporosis because there are more people with osteopenia. There’s nothing magical about the T -2.5.

Christine: Okay so being a woman is a risk factor, presumably.

Alan: It is, I’m sorry.

Christine: And who else is at risk?

Alan: Basically there are people who have got increased clinical risk factors and there are diseases associated with osteoporosis. So the diseases associated with osteoporosis are commonly the ones if you tick the box you can get a DEXA scan so low hormone levels, inflammatory conditions such as ulcerative
colitis, chronic liver and kidney disease, malabsorption, prolonged immobilisation like a stroke and Parkinson’s disease, organ transplants. Type 1 diabetes and COPD have recently been added to the list and hypothyroidism of course hypoparathyroidism.

So those are the diseases associated with osteoporosis and those people should be recommended to be assessed. But in addition to that whatever your T score if you’re very slim and you’ve got a BMI less than 19 or you’ve had a fracture before or your mum or your dad – and it used to be just your mum but now it’s your mum or your dad had a fracture, or you’re on oral steroids, you’ve got rheumatoid arthritis, you smoke or drink more than three units per day all of those, whatever your T score you’ve got an increased risk of having a fracture compared to somebody with the same T score who doesn’t have one of those clinical risk factors.

Christine: And what about sort of lifestyle factors that put you at risk?

Alan: Yes I mean people who smoke as I say, people who drink heavily, people who are very thin, people who don’t go outside so they don’t get any vitamin D, have a poor diet, low in calcium – those people are at risk.

Christine: So you mentioned steroid medication . . .

Alan: Yes glucocorticoids.
Christine: . . . as being one that we need to be wary of if they’re on it for three months or more.

Alan: Yes but the important thing is if you are considering putting somebody on steroids the impact starts on day one. So you should be considering what to do the day they start their steroids if they’re going to be on steroids for more than three months.

Christine: Okay. And thinking as well about other medications that are sometimes associated with osteoporosis or a low bone mineral density what about the contraceptive injection?

Alan: Yes, that’s interesting. It’s certainly true that it’s not good for your bones but this is given in people who are younger. And these people have a very low risk of falling. So they have a very low risk of fracture. It comes back to fracture risk assessment not necessarily worrying purely about osteoporosis. So in those people I would recommend assessment but not necessarily using a DEXA scan.

Christine: And presumably all the kind of lifestyle stuff, advice at that point is useful as well?

Alan: Taking regular weight bearing exercise, making sure your diet’s high in calcium, and you’re getting adequate vitamin D from the sunlight.
Christine: And what are the red flag symptoms?

Alan: The problem is there aren’t any real red flag symptoms because it’s fracture that counts. And people don’t get any symptoms purely because they’ve got low bone mass or they’re at increased risk of fracture.

Christine: And so how can GPs diagnose before symptoms develop?

Alan: I think they need to be proactively case finding. So if somebody has got a risk factor, clinical risk factor or one of these diseases then I think somebody should be assessing somebody’s risk. But the important thing it’s secondary prevention at the moment.

Roughly speaking 50% of patients who have a hip fracture have actually had a previous signal fracture and this is an opportunity to intervene.

Christine: Okay, so in an example for instance where you may have a lady who comes, concerned about a family history or concerned about osteoporosis in general, as a GP how should we be assessing their risk and managing that patient?

Alan: Okay so that’s primary prevention. And I would perform a FRAX Score, FRAX is fracture risk assessment tool, it’s hosted by Sheffield University and it’s a World Health Organization tool. It’s available on the web to everybody and it’s soon to actually be embedded into some of the GP systems.
So you can actually go straight into it. It takes about three minutes to do it and you put in various factors like the patient’s age, weight, and height. Because the BMI is actually a very good surrogate marker for BMD and the clinical risk factors that I mentioned before. And you just click on the appropriate button. Then that gives you a risk of your 10 year probability of having a fracture but of course what does that mean? There has to be threshold for treatment.

Well on the web just below that there’s the NOGG button which is the National Osteoporosis Guideline Group, if you go on to that you then get a graph which is sort of colour coded as per the traffic lights of green, amber, and red. If you’re in the green zone you can be reassured and possibly reassess patients in five years’ time. If you’re in the red area then you should consider actually treating somebody so somebody for example who’s had a vertebral fracture really will, should go straight on to treatment. And if you’re in the amber zone then because of the variation in the risk factors it’s probably wise to request a DEXA scan. And then when the patient comes back to you and you know their bone density then you can factor that into the FRAX risk and press the NOGG button then you’ll be in the red or the green zone. So you’ll know where to go from there.

Christine: And we’ll have a link to that resource at the end of this module. You mentioned that using that tool that there are circumstances where you’d start treatment. Would that be without a scan?

Alan: Yes it’s certainly cost effective according to the National Osteoporosis Guideline Group to treat somebody who has had a
post-menopausal fragility fracture. And we’re really talking now about the wrist, the humerus, vertebrae, or hip. But of course a fragility fracture is defined as a fracture falling from your own height so it’s minor trauma. A good way if you’re a GP of thinking of it is if I’d fallen in the same way would I have broken a bone. And if the answer’s, yes it probably isn’t a fragility fracture. If it’s no then it’s a fragility fracture. And those people should be considered for therapy.

Christine: And how do you communicate to the patient at that stage? Because I guess traditionally they’d be getting a scan with the diagnosis on there of osteopenia or osteoporosis and then having treatment. So how does it differ with this tool?

Alan: It is difficult because doctors and patients like tests. And certainly the predictive value of FRAX is actually better using a DEXA result but it’s not absolutely necessary. It’s the same sort of thing as if you’ve had a heart attack whatever your cholesterol it’s too high for you. Well similarly if your bone mineral density is -2.4 and you’ve had a hip fracture your bone mineral density is kind of irrelevant. You’ve had a hip fracture, you’ve got osteoporosis almost by definition, and you’d need to have treatment to prevent a further fracture.

Christine: And you’ve mentioned the people in the amber zone who do go and have the scan. As a GP they come back to you wanting the results communicated what are your tips there about talking through the scan with a patient and the variety of different results you might be faced with?
Alan: I actually find showing them the screen of the FRAX tool and the NOGG result if you like actually very helpful, you know just spin the screen round and you can show that it’s not your personal opinion, it’s almost the World Health Organization advising the patient to go on to treatment. And they’ve got a lot of buy in when they see the screen.

Christine: And talking through a bone mineral density scan, how do you approach that with a patient?

Alan: They understand the concept of bone density but I have to also point out that you know bone is like a Crunchie bar and all these little sort of interconnecting plates actually dissolve if you like. And that weakens the structure.

Christine: And often through that tool or the scan you will be recommended the treatment options. Can you talk us through how you would treat?

Alan: Both NOGG and NICE would advocate alendronate as the first port of call and I would entirely endorse that. We have considerable evidence with alendronate in addition to that it’s very cost effective because it is only 15 or £16 a year. Risedronate is also now generic but I don’t believe at this moment in time the price has been decided. It’s probably going to be in the region of £50 but I suspect the price will fall as time goes on.

So it’s an oral bisphosphonate first. That’s assuming the patient
can take it and I think you’ve got to consider that about 25% of patients will not get on with oral alendronate for one reason or another. Once you’ve tried oral alendronate if you’ve got dyspepsia it might be worth trying risedronate because it’s slightly less toxic to the GI tract. Failing that you can consider strontium ranelate. Please don’t use a proton pump inhibitor or an H2RA because it’s not an acid related dyspepsia and in addition there’s evidence to suggest that PPIs and H2RAs actually increase the risk of fracture.

So you can then consider alternatives and there’s a new treatment out, denosumab, which is Prolia, which is a monoclonal antibody which is very effective. Of course the difficulty is it’s a six monthly injection and there’s a lot of discussion at the moment about who is actually going to give that injection. And a lot of people think the first injection should be by secondary care and then follow up injections in primary care.

Christine: And talking about the side effects with bisphosphonates, you mentioned the main one being dyspepsia, are there any other side effects that patients will commonly come with?

Alan: It’s very very rare to have any other side effects I think. Dyspepsia is the problem and of course 40% have dyspepsia in any one year so it’s difficult to differentiate the dyspepsia that’s caused by the bisphosphonate. And the dyspepsia they’re going to have because they’re human.
Christine: And what about those patients who are already on a PPI for instance? Obviously there’re special instructions in terms of how you take a bisphosphonate it might be useful just to briefly go through that now.

Alan: Yes, bisphosphonates and oral bisphosphonates are not easy to take. They need to be taken on an empty stomach, they’re one of the most poorly absorbed drugs we have. And then they have to be taken with the patient being very upright – standing or sitting – with a full glass of water. And I say a full glass of water because patients don’t understand 100 or 150 mls or whatever. A full glass of water to wash it down and then they have to not eat for, depending on the preparation, either half an hour or an hour afterwards.

So it means they can’t take their tablets. It means they can’t have a shower because that’ll involve bending over and washing their feet. They’re not easy drugs to take but at least it is only once a week.

Christine: Okay so it’s important for us to communicate that to the patient when we’re starting these medications as well?

Alan: Yes, yes.

Christine: And you also mentioned taking medications an hour or so afterwards.
Alan: Yes including and especially the calcium and vitamin D that should be coprescribed with these drugs.

Christine: And one of the things you mentioned earlier was that, you know a lot of fractures occur in patients who have osteopenia. And one of the results we often will get through with a scan result or through the tools that you’ve been talking about will be you know lifestyle treatment. Can you briefly run through what we should be telling our patients in terms of that side of treatment?

Alan: You’ve got to make sure they’ve got an adequate calcium intake but that is actually very very difficult. And it can take a dietitian an hour to sort that one out. So it’s difficult and you know it’s sensible if they take dairy products.

As regards vitamin D about 16% of the older population have got low or vitamin D deficiency and that’s probably about 30% in the nursing homes. And the important thing is to recommend people to be out in sunlight because we actually use UVB to metabolise cholesterol to vitamin D in the skin. And if you’re fair you should be in the sun for about 20 to 30 minutes three times a week. If you do it for 20 to 30 minutes that actually gives you about 2000 international units. If however you’re darker skinned you may need twice or even 10 times that amount of time. And it should be at midday between April and September. That’s the only time in Britain I’m afraid when the sun is forceful enough.

And a good way of sort of assessing whether the sun is strong enough is to look at your shadow. If your shadow is actually shorter than you are tall you’re metabolising vitamin D. So expose your face and forearms in the summer months, three times.
And if you go on to the beach in a swimming costume you get about 20,000 units at the stage when you're just starting to feel nice and sort of red and glowing.

Christine: And clearly there's a reduction of smoking and drinking which we've touched on already.

Alan: Smoking yes certainly and these things are dose related and . . . But just consider somebody's bones if a woman is drinking three or more units a day.

Christine: And so we've had our patient come in, concerned about osteoporosis or may have had a reason why we're concerned. We've gone through the FRAX tool and we may have done a scan and we've treated them with bisphosphonates and calcium and vitamin D. How do we need to follow them up? I mean the obvious thing is patients obviously anticipate having a scan or some kind of follow up in that sense. What would you recommend?

Alan: Yes I mean this is a very difficult area. First of all I often prescribe the bisphosphonate and then arrange to see a patient a month later. That gives the option or the opportunity for them to talk about side effects and we can deal with them. Also it separates the prescribing of the bisphosphonate from the calcium and the vitamin D. So if they have a side effect it's easier to actually apportion blame if you like to the correct medication. The other thing that does is to see the patient again
because follow up has been shown to improve by about 40% persistence with medication. It’s important as a clinician to show that you’ve got buy in to the importance of the therapy.

When it comes to repeating a bone scan that’s a difficult area. And most of us would say usually there is no place for a repeat scan. On treatment bone mineral density improves very slowly, one to two percent per year and you’ve got an error in the DEXA scan result of one to two percent. If you are going to repeat it please wait at least two years. But if we come back to the original definition of osteoporosis which is about bone strength, it’s not just about the bone mineral density it’s the bone turnover and improvement in the micro architecture. And in clinical practice we can’t measure these so I’m afraid there is little place for repeat scans. And basically all you can say is “Well you haven’t had another fracture, that’s good, carry on with the treatment.” And then “Well, you’ve had a fracture. Well maybe you would’ve had two if you hadn’t been on therapy.”

Christine: So it’s about . . .

Alan: It’s a very difficult area.

Christine: And we’ve talked a lot about lifestyle already. How can we be preventing the onset of osteoporosis in primary care? Is there any other things that a GP should be providing or thinking about?
Alan: The way in which we are moving forward osteoporosis is currently not in the quality outcomes framework. It’s being piloted at the moment. And there is of course the directly enhanced service that’s continuing for this year.

But the area of interest is the Fracture Liaison Service. This traditionally is in secondary care and about 30% of trusts in England have got a fracture liaison service. Now traditionally this is a nurse wandering around A&E, fracture clinic, the wards trying to find patients with fracture in order to assess them according to guidelines. And I think this is a very good opportunity for us to do this in primary care because after all the patients are frail, elderly they are coming to see us. They have diseases that are associated with osteoporosis, some of which are actually in the quality outcomes framework so we can prospectively manage them and case find these patients. There’s no place for screening at the moment.

So in Crawley for example we have a Fracture Liaison Service, a nurse who is dedicated to finding these patients and managing the care gap, referring them if necessary, doing the necessary blood tests to exclude secondary osteoporosis and following them up for treatment.

Christine: So you’ve given us some really useful and practical information there. Have you got any other comments that you’d like to add?

Alan: Just to reiterate the fact that it is really a disease area that belongs in primary care. And it’s a manageable workload. The average GP will see about half a dozen new fractures, new fragility fractures in one year. And that GP will have about 50
patients sitting on their books who’ve had a fracture in the last 10 years or so. And it’s worth recalling these patients; obviously the people who’ve more recently had a fracture are actually at greater risk of refracture so they’re the people to get at.

And the people with fracture will be coming to see you. It’s been shown that in the year following a forearm fracture a patient will come and see their GP four extra times in a year. A patient with a hip fracture, nine and a patient with a vertebral fracture 14 extra consultations. Not necessarily because of the problem with the fracture but actually, presumably because of the decreasing quality of life that they have following a fracture.

Christine: So there’s lots of opportunity for us to pick up these patients and treat them hopefully.

Alan: Absolutely.

Christine: Great. Well thank you very much.

Alan: It’s a pleasure.

Christine: Many thanks to Dr Alan Cooper. For useful resources follow the links on the next page.

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