Should Denosumab Injection be delayed during the Covid-19 Pandemic?

Now, more than ever, staying fracture-free is critical for anyone with osteoporosis to avoid unnecessary hospital visits or admission.

Guidance from both NHSE and NICE COVID-19 rapid guideline: rheumatological autoimmune, inflammatory and metabolic bone disorders state that denosumab treatment should **not be postponed**.

The offset of treatment effect is very rapid, resulting in accelerated bone loss and an increased risk of 'rebound' fracture.

- BMD decreases to pre-treatment baseline within 12 months
- Rebound has been associated with the rapid occurrence of multiple vertebral fractures
- Offset occurs if treatment is delayed by as little as four weeks, i.e. more than seven months after previous injection

However, if a doctor's appointment must be cancelled or the patient is too unwell to attend, the International Osteoporosis Foundation advises their next injection is NOT delayed for more than four weeks.

Self-Administration

Patients also have the option to self-administer denosumab at home via the Prolong patient support programme. The clinical decision as to whether a patient or carer is suitable to self-administer Prolia® (denosumab) sits with their healthcare professional.

Patients who are given the option by their healthcare professional to self-administer Prolia® (denosumab) at home - or someone fulfilling a 'caring' role – can watch a short self-injection video. In addition, the Prolong programme has a dedicated nurse helpline to reassure and train patients, or carers, on self-injection technique

Full details of the programme are available on the Royal Osteoporosis Society (ROS) website https://theros.org.uk/healthcare-sector-news/2020-04-14-amgen-invites-healthcare-professionals-to-enrol-patients-in-the-prolia-denosumab-self-administration-programme/

Calcium Monitoring

Local prescribing guidance to support the denosumab LCS is available on the PAD and states

- Clinical monitoring of calcium levels is recommended before each dose and, in patients with risk factors for hypocalcaemia (e.g. severe renal impairment, creatinine clearance

Although blood tests should still be performed if possible, in order to reduce the risk of Covid-19 exposure the ROS suggests that the pre-treatment calcium check may be omitted for individuals at low risk of hypocalcaemia.

Low-risk patients

- Have previously received treatment with denosumab on two or more occasions without clinical or biochemical evidence of hypocalcaemia pre- or post-treatment
- Are taking their usual calcium or vitamin D supplements regularly (see below)

- Have adequate and stable renal function, ie. CKD G1-3a
- Have no new comorbidities or medications since previous injection that are likely to affect renal function or calcium handling

If the pre-treatment blood test is omitted, apply these precautions to reduce risk of hypocalcaemia:

- Ensure dietary and supplemental calcium equates to at least 1000mg a day. If patients are consistently taking the recommended dose of a preferred calcium and vitamin D supplement from the local osteoporosis guidelines then it is not necessary to check dietary intake. However, patients are often not fully concordant with their supplements so the BDA Food Fact Sheet: Calcium available on PAD may be useful or a calcium calculator.
- Ensure the patient takes at least 800IU colecalciferol a day (a higher dose may be needed in obese patients i.e. BMI >30). They will be taking this dose if concordant with supplements as above.
- An additional bolus of oral vitamin D (suggested dose is 1 x colecalciferol 20,000iu) a week or two prior to injection is recommended to ensure adequate vitamin D levels. However, this could be omitted if it is confirmed that the patient is taking the prescribed dose of calcium and vitamin D supplements as above and that previous calcium and vitamin D blood test results have been good. This can be repeated every 6 months if blood testing is still not available.
  *Please note that a single dose of 20,000 IU is extremely unlikely to cause toxicity. The effect of the bolus dose reduces rapidly, and if there is any increase in serum calcium levels it would be small and brief and therefore extremely unlikely to cause problems. However, giving denosumab to someone with a low vitamin D level is very likely to trigger symptomatic hypocalcaemia. This approach is recommended to balance risks in a situation where the usual practice of doing the blood test cannot be followed.
- Where feasible, take a blood sample to check calcium and creatinine, at the time of injection

It should be noted that this is pragmatic advice provided by the Royal Osteoporosis Society, based on expert opinion with agreement from a range of clinicians experienced in using both vitamin D and denosumab.

If the patient is unable to self- administer denosumab, does not have a carer, relative or friend who can administer the injection and is unable to attend the surgery for an injection, please contact the rheumatology team urgently for advice on alternative treatment option.

References:

https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/clinical-guide-rheumatology-patients-v1-19-march-2020.pdf (Accessed 13.05.20)

https://www.nice.org.uk/guidance/ng167 (Accessed 13.05.20)

https://www.iofbonehealth.org/news/covid-19-and-osteoporosis (Accessed 13.05.20)

https://theros.org.uk/healthcare-professionals/denosumab-prolia-treatment-and-the-covid-19-pandemic/ (Accessed 13.05.20)