ATKINSON ORAL SURGERY

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MEDICATION RELATED OSTEONECROSIS OF THE JAWS

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Over recent years, there has been an increase in complications in the mouths of patients who have been taking medications for bone diseases in particular osteoporosis. Patients may have also received these types of medications with particular types of cancers.

The complications usually arise after dental extractions but can also occur spontaneously (although much more rare).

The common drugs are one of these two:

1. Anti-resorptives (reduce bone resorption)
    a. Bisphosphonates (e.g. Fosamax®, Actonel®)
    b. Denosumab (e.g. Prolia®)
2. Anti-angiogenics (reduce new blood vessel formation)

There is also new evidence of a link between certain immune-modulating medications including methotrexate (a drug often prescribed for autoimmune diseases such as rheumatoid arthritis).

Your clinician will be aware of the names of these medications so please disclose all your medical history when asked. Questions may include, *"Have you ever taken any medications for your bones?"*

It does not matter if you have now ceased the medication. Any past use is important to disclose. The route of administration may be a tablet, an injection, or via a vein in a drip.

If any further information is needed, your practitioner will liaise with your General Medical Practitioner, or the doctor who prescribed the medication to understand the dose you have received or will be planning to receive.

Why are we so worried?

Patients who have received these medications are at an increased risk of a non-healing area after oral surgery procedures such as dental extractions. There can be an exposed area of dead bone. It is called Medication Related Osteonecrosis of the Jaw (MRONJ), formerly BRONJ.

Slowly the area may heal, however it can also increase in size and never heal. Or, it can get infected and lead to jaw fracture or fistula formation. It can impede further dental work.

The risk of it developing after surgery is dependent on the dose that you received, the number of years you were on the medication, when your last dose was, what the route of administration was, if you have any other medical conditions, and the surgery that needs to be carried out.

If you are in pain and it is deemed a tooth needs to be extracted, your practitioner may provide relief of pain initially, and wait until a safer time to carry out treatment. There may be times when there is no option but to remove the tooth.

Treatment

If it does occur, it is recommended that a Specialist such as an Oral Surgeon manages you. The management may be conservative such as prescription of mouth rinses or long-term antibiotics, or more involved such as superficial bone debridement. However, it will be dependent on the specifics of your case. The key is that you will be under regular review, typically 3-monthly.

How often does it occur?

The good news is that it is quite rare. Again, this is dependent on the dose, type and route of administration of the drug. Although it may be rare, it is still something that you should be aware of and appropriate measures put in place to decrease the risk of it developing.

Oral bisphosphonates (e.g. Fosamax®, Actonel®) for the treatment of osteoporosis has a risk between 0.004-0.1%. Dosages longer than four years are at an increased risk.

Intravenous administration of bisphosphonates is related with a much higher risk of MRONJ development – a range of 0.017-1.1%.

Finally, newer drugs such as Denosumab (Prolia®) has a risk of 0.04-1.9%.

These figures were taken from a recent position paper published by the American Association of Oral and Maxillofacial Surgeons (Ruggiero et al, 2014).

A note on Dental Implants

Dental implants (titanium) are becoming more common than traditional oral prostheses such as dentures. It is important that you understand that implant placement holds the same risks of MRONJ as other surgical procedures.

Dental implants are not necessarily contraindicated in patients on these types of medications; however, there is a risk of developing MRONJ, non-healing site, infection, and subsequent implant failure.

The relative risk is <0.5% for those taken oral medications, but increases 10-15 times higher in those who have received intravenous doses.

What should you do?

- If you have taken any medications for your bones, you should always disclose this to your dental practitioners
- You should have regular check-ups and maintenance work on your teeth to decrease the risk of you requiring surgery in your mouth such as dental extractions or implant placement.

What will we do if you require surgery?

Any surgery in the mouth should be planned appropriately. This is particularly important for those on these types of medications. The evidence around the prevention of this condition is not concrete, however, there is some evidence at reducing the potential with the use of antibiotics, anti-microbial mouth-rinses and different surgical techniques. Your surgeon will discuss with you if these regimes are to be followed. Unfortunately, the risk is never zero and may occur despite best interventions and intentions.

It is important that you are closely monitored in your healing phase, and multiple review appointments may be necessary.

Hopefully the information in this leaflet will answer most of your questions about medication related osteonecrosis of the jaws. If you have any further questions, discuss this with your dental practitioner or Oral Surgeon.

Dr Mark Daniel Atkinson **06/03/2019**