Name:

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Group:

85-B

Pathology Question:

What oral manifestations are seen in patients with Diabetes?

Report:

When high amounts of glucose are in the blood for a prolonged period of time, deemed chronic hyperglycemia; this can start to alter the normal function of the body's pancreatic Beta cells, known to secrete insulin. Beta cells get destroyed which impairs their ability to secrete insulin. Without beta cells working properly, there will be an increase of blood glucose levels and a decrease of glucose removal leading to a hyperglycemic patient. Patients with hyperglycemia create AGE-proteins (advanced glycation end-product) which activate receptors on monocytes to differentiate into altered macrophages that overproduce inflammatory cytokines and reactive-oxygen species. This in turn causes the immune system to dysfunction leading to uncontrolled systemic inflammation. An individual with uncontrolled diabetes will have an increased risk of infection and abnormal healing time because the body will not be able to "shut off" or stop the inflammation stage and proceed through the other stages that are needed to heal properly. This will compromise the health of the oral cavity. Some common diseases that tend to take advantage of an immunocompromised oral cavity that we see in diabetic patients are Candidasis, Lichen Planus, and Periodontitis. A common contributing factor is xerostomia. Not only is the patient chronic displaying an inflammatory response, the patient will have a prolonged healing time due to the AGE-RAGE activation that inhibits the repair mechanisms in the oral cavity. Also, with the extra cytokines being secreted, the body responds by activating osteoclast precursors to make more osteoclasts, which resorb bone. Again, prolonging healing process further.

References:

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