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Literature Review **Published Date:-2022-12-20 11:21:19**

[Radiation-induced salivary gland damage/dysfunction in head and neck cancer: Nano-bioengineering strategies and artificial intelligence for prevention, therapy and reparation]

Saliva is produced by and secreted from salivary glands. It is an extra-cellular fluid, 98% water, plus electrolytes, mucus, white blood cells, epithelial cells, enzymes, and anti-microbial agents. Saliva serves a critical role in the maintenance of oral, dental, and general health and well-being. Hence, alteration(s) in the amount/quantity and/or quality of secreted saliva may induce the development of several oro-dental variations, thereby the negatively-impacting overall quality of life. Diverse factors may affect the process of saliva production and quantity/quality of secretion, including medications, systemic or local pathologies and/or reversible/irreversible damage. Herein, chemo- and/or radio-therapy, particularly, in cases of head and neck cancer, for example, are well-documented to induce serious damage and dysfunction to the radio-sensitive salivary gland tissue, resulting in hypo-salivation, xerostomia (dry mouth) as well as numerous other adverse Intra-/extra-oral, medical and quality-of-life issues. Indeed, radio-therapy inevitably causes damage to the normal head and neck tissues including nerve structures (brain stem, spinal cord, and brachial plexus), mucous membranes, and swallowing muscles. Current commercially-available remedies as well as therapeutic interventions provide only temporary symptom relief, hence, do not address irreversible glandular damage. Further, despite salivary gland-sparing techniques and modified dosing strategies, long-term hypo-function remains a significant problem. Although a single governing mechanism of radiation-induced salivary gland tissue damage and dysfunction has not been yet elucidated, the potential for synergy in radio-protection (mainly, and possibly -reparation) via a combinatorial approach of mechanistically distinct strategies, has been suggested and explored over the years. This is, undoubtfully, in parallel to the ongoing efforts in improving the precision, safety, delivery, and efficacy of clinical radiotherapy protocols/outcomes, and in designing, developing, evaluating and optimizing (for translation) new artificial intelligence, technological and bio-pharmaceutical alternatives, topics covered in this review.

Review Article **Published Date:-2022-11-08 10:11:41**

[Renal neoplasms and computed tomography]

Introduction: In recent years the increased utilization of imaging modalities has led to an accelerated diagnosis of renal masses. Initial diagnoses and staging are commonly done with the abdominal Computed Tomography (CT). This study evaluates the various aspects to consider when utilizing CT scan for the diagnosis of renal masses. Discussion: CT scan is the most important imaging modality to evaluate renal neoplasms. Postcontrast acquisitions can be tailored according to the indication for the study. This alongside various techniques, imaging modalities and classification systems may help differentiate the malignant Renal Cell Carcinoma, from benign or metastatic lesions, lymphomas or renal pseudotumor. Finally CT can also be utilized alongside other tools for staging the tumor. Conclusion: Certain CT imaging features are pertinent to evaluate the malignancy potential of renal lesions. However the CT alone may be inconclusive in diagnosing the majority of renal neoplasms, excluding AML with macroscopic fat. Hence it is recommended that the CT aid additional imaging modalities and tools to reach an accurate diagnosis.

Short Communication **Published Date:-2022-09-21 17:17:54**

[Non-invasive physical plasma as an innovative physical approach for the oncological therapy of skeletal sarcomas]

Human osteosarcoma is the most common malignant bone tumor with an annual incidence of two cases per 1 million population. Osteosarcoma account for 60% of all malignant bone tumors occurring in childhood, followed by Ewing’s sarcoma [1-3]
