Comments on "Sappanone A Aggrandises Ionising Radiation–induced Damage in Oral Epithelial Cells"

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Radiation-induced oral mucosal disorders and injuries are major complications for patients undergoing head and neck radiotherapy. They are either reversible or permanent, and include oral mucositis, xerostomia, bacterial or fungal infection, taste dysfunction, sensory disorders and oral mucosal fibrosis. Among these, radiation-induced oral mucositis (RIOM) is the most common complication observed in approximately 80% of patients who undergo head and neck radiotherapy. RIOM is a form of acute inflammation that arises within the first 2 to 3 weeks after radiotherapy and is characterised by hyperaemia and redness of the oral mucosa, which can eventually progress to oral ulcers with a pseudomembrane. Patients may suffer from extreme pain when speaking and swallowing, leading to decreased food intake, significant weight loss and malnutrition, thus influencing their subsequent radiotherapy.

Traditional Chinese medicine plays an increasingly active role in the prevention and treatment of radiation-induced oral mucosal injuries. Many studies have demonstrated that traditional Chinese medicine can reduce the incidence of oral mucositis effectively and alleviate related symptoms such as xerostomia and pain, thus improving patients' prognosis. As a widely distributed medicinal material, *Caesalpinia sappan* (CS) processes anti-inflammatory and antimicrobial properties and shows potential value in the treatment of multiple inflammatory disorders.

In the article "Sappanone A aggrandises ionising radiation–induced damage in oral epithelial cells", Zhao et al report that Sappanone A, isolated from the heartwood of CS, has destructive effects on the viability of oral epithelial cells, accentuating ionising radiation–induced DNA damage. Sappanone A targets and suppresses inosine monophosphate dehydrogenase 2, a rate-limiting enzyme in nucleotide synthesis, leading to delayed DNA repair under radiation. These discoveries have deepened our understanding of the role of CS in regulating cell radiosensitivity, which will assist future pharmaceutical developments for treating RIOM.

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