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Re: Dental therapy utilising autologous mesenchymal stem cells

The author has recently shown safety and efficacy using autologous MSCs in the international peer reviewed literature to treat chronic oral and facial pain in humans. [1] However, current TGA regulations only allow medical practitioners to use this form of therapy. Dental practitioners should be recognised and permitted to use this therapy. Dental studies using stem cells are numerous and have been published in the literature. [2,3] In addition, the dental pulp and periodontal ligament are localised sources of abundant MSCs, and are ideal for regenerative dental therapy. [4]

Potential dental therapy that would be advantageous for improved public health:

- Oral and maxillofacial surgery for reconstruction of lost bone and soft tissue for dental implants, and to restore function and aesthetics following trauma and cancer surgery.
- Management of oral and facial pain
- Regeneration of bone for orthodontic and periodontal needs
- Regeneration of the dental pulp for endodontic therapy

Dentistry is a specialised area of healthcare that uses evidence based medicine. Dental treatment, equipment and materials are regulated by Australian Government agencies (TGA and AHPRA) for public safety. My submission is that dentists (general dentists and dental specialists):

1. should be acknowledged and permitted to use autologous MSC therapy in any new TGA regulations
2. use evidence based research in assessment and treatments
3. should undertake additional training to ensure patient safety is met and best clinical outcomes are achieved
4. use TGA licensed tissue processing centres

Key references

1. A preliminary report on stem cell therapy for neuropathic pain in humans. Vickers ER, Karsten E, Flood J, Lilischkis R. J Pain Res. 2014 May 8;7:255-63. doi: 10.2147/JPR.S63361. PMID: 24855388 [PubMed]

2. Treatment of osteoradionecrosis of mandible with bone marrow concentrate and with dental pulp stem cells. Manimaran K, Sankaranarayanan S, Ravi VR, Elangovan S, Chandramohan M, Perumal SM. Ann Maxillofac Surg. 2014 Jul-Dec;4(2):189-92. doi: 10.4103/2231-0746.147130.

3. Dental pulp stem cell responses to novel antibiotic-containing scaffolds for regenerative endodontics. Kamocki K, Nör JE, Bottino MC. Int Endod J. 2014 Nov 25. doi: 10.1111/iej.12414. PMID: 25425048

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