Communication

Publication: Acellular Matrices for the Treatment of Wounds

Keith Harding, Robert Kirsner, Daniel Lee, Gerit Mulder and Thomas Serena, International Consensus. Acellular Matrices for the treatment of wounds. An expert working group review. London, Wounds International 2010

Abstract: Currently there is no definitive paper or guideline on the use of acellular matrices in acute and chronic wounds. To begin to address this, an expert working group convened in New York, USA in July 2010 to review current knowledge of acellular matricies and their rationale for use.

The recommendations in this document are based on the consensus opinion of the group and the available evidence. They aim to help both generalist and specialist clinicians decide when to use and how to select an appropriate acellular matrix. This document also aids understanding of how these products may be classified within the rapidly growing range of tissue-engineered products that are indicated for wound healing.

Acellular matrix products can be used in a wide variety of applications, including burns and reconstructive surgery, soft tissue and abdominal wall repair and as internal implants for orthopaedic use in joint resurfacing and tendon repair. This document focuses on the use of acellular matrices (or scaffolds) in hard-to-heal wounds such as diabetic foot ulcers, venous leg ulcers and pressure ulcers.

Points of interest from this publication

One of the characteristics of hard to heal wounds is prolonged inflammation, which damages the native extracellular matrix (ECM) that would normally guide the wound healing process. Replacement of this damaged ECM is a beneficial strategy for treating hard to heal wounds. An ideal ECM replacement would be one that closely approximates the structure and function of the ECM it is replacing.

The expert working group produced a list of the ideal properties of an acellular matrix for the treatment of hard to heal wounds.

Structural	Biological	Clinical	
• Closely resembles native ECM (eg. Retains natural architecture and key components for wound healing) • Minimum storage/ preparation needed • Terminally Sterile (ie Cannot transmit viral or other agents) • Closely resembles native ECM	• Provides a barrier for infection • Resistant to proteolytic enzyme degradation • Promotes optimal cell activity for rapid re-vascularisation and tissue regeneration • Closely resembles native ECM	• Single or infrequent application • Easy to handle/apply/ secure • Cost effective/reimbursable • Consistent with standard of care • Different delivery methods available	• No host immune response • Improves patient outcomes • Reduction in wound size/ complete closure • Reduced or no scarring and good skin durability • Low complication rate

Table reconstructed from, table 3, page 8 of the publication

How does VitroGro® ECM compare to this list of ideal requirements?

Structural: VitroGro® ECM is ideal as an ECM replacement because its design is based on proteins that are present in the physical structure of healthy ECM in the early stages of normal wound healing. VitroGro® is a sterile product that is easily stored in a freezer until use.

Biological: Clinical trials have shown the once weekly applications of VitroGro® ECM result in the formation of granulation tissue (vascularisation) and wound area reduction by re-epthelialisation.

Clinical: VitroGro® ECM results in the formation of granulation tissue (vascularisation) and wound area reduction by re-epthelialisation.

Of the patients that completed a 12 week study, 36% (16 patients) totally healed and 42% (19 patients) achieved greater than 90% wound area reduction. 64 % (29 patients) achieved greater than 50% wound area reduction. No adverse events were reported in the study that were definitely or probably related to VitroGro® ECM.

The once-weekly application of VitroGro® ECM fits in well with established treatment protocols and is well tolerated by patients.