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ABSTRACT

Allograft *versus* Bioactive Type-I Collagen used as Acellular Dermal Matrix (Biological Skin Substitute) in Cosmetic Surgery - A Review

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Abstract*: Traditionally, allografts have been considered an ideal dermal replacement product next to an autograft, the gold standard. Moreover, allografts processed aseptically showed better clinical results compared to terminally processed products[1]. We address in this review the clinical drawbacks of allografts containing potential carcinogenic component (elastin 15% w/w) compared to the discerning highly biocompatible Type-I collagen matrix for tissue regenerative applications in cosmetic surgeries.*

Methods: *Adequate literature surveys and analyses were adopted as the methodology in this review article. Our focus is around the chemistry of allografts and the potential clinical impact of elastin-like molecules.*

Discussion & Conclusion: *Elastin in allografts exists in 13 isomeric forms with varying chain lengths of 151 to 714 amino acids[2]. These intra-species molecular alterations of elastinous biomaterials used for cosmetic surgeries pose impaired biocompatibility and potential risk of cancer. Consequently, this may be the reason for the absence of elastin based implantable biomedical devices for human use. Over the years, allografts have been used traditionally, overlooking the potential carcinogenic threat of elastin fragments (elastokines)[3]. This hypothesis has been well documented through our literature survey. Please note the publications on carcinogenic impacts of elastin rich organs like colo-rectum[4], oral[5], breast[6], lungs[7], blood[8], etc. Our conclusion proposes to avoid the clinical usage of such cancer-causing elastin rich biomaterials. It can be replaced by non-immunogenic Type-I collagen-based tissue grafts for cosmetic surgeries.*

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