

Z202 The Effects of Acute Ultraviolet Radiation on Cornea in Rabbits

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UV radiation are known to damage various tissues in eye. This study was investigated the effects on rabbit cornea (New Zealand White Rabbits, 3 month olds) after exposure with 5 kJ/m² ultraviolet radiation (366 nm, wave length) for 15 minutes by Mineralight Lamp (UVGL, USA). The structure of the exposed and non-exposed cornea were examined by using light microscopy and transmission electron microscopy. Supra-threshold corneal exposure triggered damage to the epithelial and stromal tissue in cornea. The initial damage sign was an edema of the corneal epithelium, which occurred within the first few hours after exposure. The epithelial debris was found in superficial cell layer, and many damage granules were located in whole layers of epithelium. Stromal opacities and irregular arrangement of collagen fibrils were found in stromal tissue, but no significant change in corneal endothelial tissue. The results show that UV radiation cause serious clinical corneal diseases.

Z203 Collagen Gel on Dermal Remodeling for Healing Wounds in Rabbit Skin

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We investigated the effects of a natural collagen gel on dermal healing of skin wound in rabbits. Two partial-thickness skin wounds (1.5×2 cm diameter) were made bilaterally on the trunk of each rabbit (New Zealand White Rabbit). Experimental wound sites were treated with collagen gel covered with a fabric gauze for 9 days, while that of control wounds were only covered with a fabric gauze. The cellular finestructure was evaluated by electron microscopy. Wound sites treated with collagen matrix showed horizontal rearrangement of collagen fibers in dermis as well as evidence of fibroblast proliferation. These observations indicate that natural collagen gel matrix stimulate dermal collagen synthesis in treatment of skin wounds. The results suggest that collagen gel can be contributed in fibroblast growth and granular tissue formation.