ANIMAL MODELS IN ARTICULAR CARTILAGE TISSUE ENGINEERING EXPERIMENTATION: AN ONLINE DATABASES STUDY

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ABSTRACT

Tissue engineering method offers numerous plans to treat joint diseases such as osteoarthritis. The effectiveness of the intervention continues to be tested from in vitro to in vivo environment. For articular cartilage tissue engineering (ACTE), there were various animal species which has been used to evaluate the concept of the potential treatment. Each animal has its advantages and limitations in mimicking the human for articular cartilage reconstruction module. This study aims to identify the animal models used in the experimentation of ACTE. The study was done through systematic search and content analysis of relevant ACTE articles published in journals indexed in two international online databases, namely Scopus and Web of Science. There was a total of 1,644 relevant journal articles were analysed, whereby only 498 articles had reported the use of eight types of animal models. The highest use of the animal model was murine, reported in 194 articles, followed by leporine (184), porcine (35), ovine (27), caprine (18), canine (10), equine (7), and nonhuman primate (1). Meanwhile, articles were reporting on using more than one type of animal model in their works; the use of two (2) animal model was reported in 21 articles, and the use of three animal models was reported in only one article. It is complicated to choose the animal model for specific treatment evaluation as there is no perfect model to represent the human articular cartilage injury.

Keywords: Articular Cartilage, Tissue Engineering, Scopus, Web of Science, Animal Models