

## **CULTURE OF HUMAN AUTOLOGOUS CHONDROCYTES ON POLYSULPHONIC MEMBRANE - PRELIMINARY STUDIES**

Maciej Płończak<sup>1</sup>, Jarosław Czubak<sup>1</sup>, Andrzej Chwojnowski<sup>2</sup>, Barbara Kupikowska-Stobba<sup>2</sup>

<sup>1</sup>*Department of Orthopaedics, Paediatric Orthopaedics and Traumatology, Postgraduate Medical Center Warsaw-Otwock, Prof. A. Gruca Teaching Hospital, Otwock, Poland*

<sup>2</sup>*Nalecz Institute of Biocybernetics and Biomedical Engineering, Warsaw, Poland*

### **Abstract**

This work investigated an effective method of isolation and culture of human autologous chondrocytes placed on a polysulphonic membrane. The cartilage was taken from the hip joint of 78 years old woman who underwent total hip arthroplasty due to idiopathic arthrosis and from the knee of 46 years old man with cartilage lesion from non-weight bear area. The cells were released from the matrix in the course of enzymatic digestion. The isolated cells were placed with parts of polysulphonic membrane in the same culture flask and incubated. Due to evaluation the weight of tissue grown on the polysulphonic membrane the elementary analysis was performed. The elementary analysis of the polysulphonic membrane slices after ten weeks of the culture revealed higher concentration of the tissue on one part of the membrane in case of the older woman - 0.726 mg of protein per 1 mg of the membrane then in case of man - 0.513 mg per 1 mg. The established method of isolation and culture of chondrocytes is effective enough to provide a sufficient number of cells that can be used as a transplant.

**Keywords:** autologous chondrocytes, polysulphonic membrane, burning analysis