

factor of psychogenic influence on the person, depending on its features; with more pronounced disharmony they are more resistant and long lasting.

MATERIALS AND METHODS

We have studied the 153 patients (86 men and 67 women), aged between 20 and 68 years in the acute phase of burn disease and convalescence. Among the study in 65% of cases of severe thermal injury have been reported, 45%-were superficial burns, but with the defeat of the open areas of the body. In the acute phase, more common psychotic disorders, delirium acutum by type or other transient psychoses, especially in people abusing psychoactive substances, mainly alcohol. Delirious syndrome manifested in toxemia phase, at the height of the temperature of the reaction, was undulating in nature and went from 3-4 to 7-8 days.

RESULTS

In the complex treatment of these conditions are assigned psychotropic drugs, particularly neuroleptics, both classic and atypical. At all stages of the disease have been reported autonomic disorders, dissonnion phenomenon, disturbing and dysthymic disorder, partially stopped tranquilizers and antidepressants. In the later stages of the disease, mainly in young women against the background formed of hypertrophic and keloid scarring and deforming contractures, were post-traumatic stress reactions with varying degrees of psycho-social maladjustment: depressive symptoms with anxiety or anhedonia, decreased communication skills, which sometimes leads to suicide attempts. There were fears for their appearance, ability to work, loss of faith in recovery. In the process of biological regeneration therapy is constantly conducted, aimed at reducing the patient's frustration with respect to physical defects and his stay in the community.

CONCLUSION

Thus, for burn patients having mental disorders of different nature and level, which requires the inclusion of appropriate psychotropic drugs in general complex of treatment with mandatory psychotherapy at all stages of the disease.

KEYWORDS: Burns; post-burn mental disorders; post-burn dissonnion;

COLLAGEN/CHITOSAN HYBRID SPONGE AS A SCAFFOLD FOR CELL CULTURE



Vitalie Cobzac, Mariana Jian, Vadim Madan, Gheorghe Croitor, Viorel Nacu

Laboratory of Tissue Engineering and Cells Cultures, State University of Medicine and Pharmacy "Nicolae Testemițanu", Republic of Moldova

The aim of this study is to obtain a three-dimensional collagen type I/chitosan scaffold for seeding the cells cultured *in vitro*, and promotion of cell adhesion and proliferation.

Materials and methods used to obtain a collagen I/chitosan hybrid scaffold were bovine tendons that after mincing have been processed with 0,05M Na₂HPO₄ solution for 4 days, followed by enzymatic digestion with pepsin 100 mg per 1gr. of tendon, EDTA and acetic acid for 24 hours at 4°C. Then collagen was purified by precipitation with 1.8 M NaCl, followed by acetic acid dissolution and dialysis in bags with 12000 Da pore size by a large volume of 0.02 M Na₂HPO₄ solution, until pH of collagen solution become neutral or weak base, then it was frozen at -60 °C and allowed to thaw at room temperature. Collagen is separated from the remaining liquid by centrifugation at 1000 g for 10 min. The obtained collagen is dissolved with acetic acid to a concentration of 1%, then freeze-dried (EVD-12; Unicryo MCL-60). Obtained sponge was treated with 0.25% chitosan solution for 24 hours, then washed with distilled water on a vibrator, frequently changing the water. After that the collagen/chitosan sponge is freeze-dried and cross-linked at room temperature in a vapor chamber with 12.5% glutaraldehyde (SERVA) for 24 hours.

Results:

Pore size in native collagen sponge vary between 50 and 200μ, but in the case of hybrid collagen/chitosan sponge, pore size vary between 30 and 100μ.

Conclusion

The obtaining method of a hybrid collagen/chitosan scaffold for cell seeding is effective. The sponge size and microscopic structure allow its utilisation in filling tissue defects and tissue engineering.

Keywords: collagen, chitosan, hybrid, sponge.

METHOD OF CHONDROCYTES ISOLATION FROM HYALINE CARTILAGE



Vitalie Cobzac, Mariana Jian, Vadim Madan, Gheorghe Croitor, Viorel Nacu

Laboratory of Tissue Engineering and Cells Cultures, State University of Medicine and Pharmacy "Nicolae Testemițanu", Republic of Moldova

The aim of this study is isolation of chondrocytes from articular hyaline cartilage and their expansion in cell cultures for further transplantation in a cartilage defect.

Materials and methods: The study was performed on 9 New Zealand White rabbit 6 months old. Under sterile conditions, slices of hyaline cartilage were harvested from unbearing area of knee joint, followed by 0,25% trypsin-EDTA treatment for 30 min and 0,6% collagenase for 6 hours. The cells were cultivated in cell culture flasks by 10000 ± 500 cell/cm² and incubated at 37 ° C with 5% CO₂ in DMEM with 10% FBS. The cells were expanded in culture up to 21 days to a confluence of 80%. The cells was counted by a hemocytometer. The chondrocytes were stained with Safranin O and toluidine blue/fast green.

Results:

From approximately 50 ± 10 mg of cartilage were isolated $4 \times 10^5 \pm 5 \times 10^4$ cells. At staining chondrocytes with Safranin O, the nuclei were black, the cytoplasm gray-green and and cartilage, mucin were orange to red. At staining chondrocytes with toluidine blue/fast green, the nuclei appeared dark blue, the cartilage blue, deep purple and background green.

Conclusion

The method of chondrocytes isolation from hyaline cartilage is efficient and it was confirmed by *in vitro* cell staining with Safranin O and toluidine blue/fast green. Our further purpose is implantation in vitro of expanded chondrocytes on tridimensional scaffold and their transplantation in an osteochondral defect.

Keywords: chondrocyte, isolation, hyaline, cartilage

THE RESULTS OF DEMINERALIZATION OF BONE GRAFTS

Stanislav Coșciug, Viorel Nacu, Vitalie Cobzac

Laboratory of Tissue Engineering and Cells Cultures, State University of Medicine and Pharmacy "Nicolae Testemițanu", Republic of Moldova

The aim: to develop a fast method of demineralization of cancellous and cortical bone grafts effectively in various sizes for use in restoring bone defects and implement this method in practice of Human Tissue Bank.

Materials and methods: for the study was used bovine bones (tibia and femur). The bones were cut with saws, excluding their heating, bones were deperiostated, washed under running water, dried and degreased. We obtained different shapes of the bones by cutting: circular shape, semilunar shape (used for control), plate and cubic shaped bones. Grafts were distributed into five groups according to the methods of demineralization, dimensions and type of bone. We got nine transplants - bone rings with Ø 4 cm and thickness $5 \text{ mm} \pm 2 \text{ mm}$, 3 specimens for demineralization in acid and 3 by electrolysis. Three grafts were cut by half to control. Each graft weighed $0.75 \text{ g} \pm 5 \text{ g}$. One plate-shaped (70x20 mm) and one cubic-shaped (1,5 cm²) grafts were demineralized by electrolysis from the start. The acid solution was changed over every 24 hours. The demineralization was determined by X-ray, by weighing-machine and by mechanical method.

Results: complete demineralization of the circular-shaped grafts through the electrolytic solution was obtained on the 4th day, and in the samples demineralized just only by acid solution the complete demineralization was obtained on the 7th day. The superficial demineralization of the plate-shaped cortical graft was obtained on the 3rd day, but final demineralization on the 7th day. Partial demineralization of cancellous cubic-shaped graft was obtained on the 2nd day, but total demineralization was obtained on the 5th day.

Conclusions: electrolysis is a method for accelerating the demineralization. The speed of demineralization depends on the dimensions, and type of bones. Cancellous bone demineralize faster than cortical one.

Keywords: decalcination, demineralization, bone graft

ARTHROSCOPIC TREATMENT OF DEGENERATIVE ARTHRITIS OF THE KNEE (LITERATURE REVIEW AND PROPER EXPERIENCE)

Dumitru Darciuc

Institute of Emergency Medicine, Chișinău, Republic of Moldova

Study goals: In this review described most important methods of arthroscopic treatment of degenerative arthritis of the knee, surgical technique, classifications, structure. And the results, such reported in a medical literature, as the proper results of our clinic.

Material and methods: At the base of investigated clinical, radio-logical and CT - several groups of knees after different methods of arthroscopic treatment, in dependence of disease study, age, and any another important factors, was any conclusions elected, that may be influence and follow for knee arthritis treatment.

Results: It was obtained optimal several algorithms of arthritis knee examinations, arthroscopic treatment and postoperative