

ABSTRACT

The study of the apoptotic procedures after cochlear implantation can provide interesting information about the compatibility of the materials used for the manufacturing of cochlear implants and the "behavior" of the cochlear cells. The purpose of the study was the estimation of the levels of caspases-3.

Methods: We used two cohorts of rabbits, which consisted of three animals each. Another two rabbits were used as control group. In the first three we have implanted an electrode (Medel Ltd, Austria) same with those used in cochlear implants. All of the animals were of the same weight and approximately of the same age. We gave aminoglycoside (gentamicin) to the animals of the second group. Blood samples were taken in the 1st, 3rd, 7th and tenth day after the beginning of the experiments. The dosage of the drugs was the same as this given to children. Aminoglycosides were given twice a day, every twelve hours. After the tenth day corticosteroids were given to the animals of both and then blood samples were taken every two days.

Results: We found that the levels of caspases three raised immediately after implantation but in the animals which received gentamicin only in the seventh day after the beginning of the experiment. Corticosteroids were effective only in the animals of the first group.

We consider that caspases three is a sensitive predictor which can be used for the study of biocompatibility.