THE INFLUENCE OF NATURAL KILLER CELLS TO THE APOPTOSIS OF UROTHELIAL CARCINOMA CULTURED CELLS : INVITRO STUDY

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Aim/objective
To investigate the influence of natural killer cells (NK cells) in the apoptosis of cultured-urothelial carcinoma cell line.

Material and methods
An in vitro-experimental study using urothelial carcinoma cell line (UCC) was conducted. The UCC was cultured until confluent and randomly allocated into 3 groups to receive NK cells treatment: group-1 (n=5, NK cells applied for 24 hours); group-2 (n=5, NK cells applied for 48 hours) and group-3 (n=5, NK cells applied for 72 hours). Each treatment group was compared to controls: C-1 (n=5), C2 (n=5) and C3 (n=5). Flowcytometry using a Apoptosis kit (Annexin V, Becton Dickinson) were used to identify and calculate the number of urothelial apoptosis cells in each group. SPSS 20 statistical tool was used to analyse data and compare the number of apoptosis between groups.

Results
We did not find a significant difference in the number of apoptosis cells between group-1 (16.31 ± 2.25) and C-1 (16.33 ±3.96; p=0.99). Similarly, no significant number of apoptosis cells was observed between group-2 (16.93±2.50) and C-2 (12.96±3.67; p=0.09). However, a significant difference in number of apoptosis cells was observed between group-3 (20.35±8.11) and C-3 (8.76±1.52; p=0.01).

Conclusions
Our study revealed that NK cells significantly induce apoptosis of urothelial carcinoma cultured cells within 72 hours, but not before. This results also implies the potential benefit of NK cells to be used as a treatment option in the clinic.