ABSTRACT

**Purpose**: To analyze the effect of allogeneic Natural Killer cells in apoptotic percentage of retinoblastoma cells culture at Soetomo Hospital Surabaya.

**Methods**: An experimental study was conducted. Experimental unit taken from enucleated intraocular retinoblastoma. Diagnosis was made based on clinical findings and confirmed by pathological diagnosis from tissue specimen after surgery. Experimental unit was cultured and replicated into 20 wells and divided into 2 groups. Haploidentical allogeneic Natural Killer cells was taken from patient’s mother. After being cultured for 11 days, Natural Killer cells was given to the treatment group. Apoptotic percentages in both groups were examined using flowcytometry in 14\textsuperscript{th} day. Annexin V and Propidium Iodide were used to detect early apoptotic cells in this study.

**Result**: The data was collected and analyzed statistically using independent t-test. Flowcytometry results showed percentage of life, early apoptotic, late apoptotic, and necrotic cells. Early apoptotic cells percentage could be seen in lower left quadrant. Percentage in treatment group was 20.17 ± 1.81, while in control group was 19.53 ± 2.36 with p = 0.505. This result was not significant difference due to p>0.01. Percentage of late apoptotic, cell death and necrotic cells seen in upper left quadrant was 18.20 ± 1.09 in control group and 7.51 ± 7.51 in treatment group with p= 0.000.

**Conclusion**: There was no difference of apoptotic percentage between treatment group and control group.

**Keywords**: Retinoblastoma, Allogeneic Natural Killer Cell, Apoptosis, Flowcytometry.