

The difference of Natural Killer cell activities of the people live in the aircraft noise area of Adi Soemarmo Airport Boyolali, Surakarta, Indonesia

Title	The difference of Natural Killer cell activities of the people live in the aircraft noise area of Adi Soemarmo Airport Boyolali, Surakarta, Indonesia
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Abstract	<p>Exposure to noises contributes to a health risk. There is sufficient scientific evidence that noise exposure could induce hearing impairment, hypertension and ischemic heart disease, annoyance, sleep disturbances, and decreased school performance. Other evidence as changes in the immune system and birth defects is limited. The aims of this study is to find out the difference of Natural Killer (NK) cell activities of the people live in the aircraft noise area of Adi Sumarmo Airport, Boyolali, Surakarta, Indonesia. The research design was an analytical with a cross sectional approach, taking location at the Dibal and Gagak Sipat Villages, Ngemplak Sub district, Boyolali District. The study was conducted from June 2008 to June 2009. The number of subjects involved was 39. They were divided into 3 groups. Group 1 was exposed to 52.17 dB of noise level (13 respondents). Group 2 was exposed to 71.79 dB of noise level (13 respondents), and Group 3 was exposed to 92.29 dB of noise level (13 respondents). The cytotoxicities of NK cells was measured by flow cytometric and using a non-radioactive method. The samples were taken using a simple random sampling. The data were analyzed by Anova followed by Post Hoc Test using LSD test completed with Homogenous Subsets. The results showed that the activity of NK cells of Group 1, 2 and 3 were $12.50 \pm 3.25\%$, $17.20 \pm 3.06\%$, and $22.33 \pm 6.30\%$, respectively. The Anova test showed that there was a significant difference of NK cell activities, in the groups of respondents ($p = 0.000$). In conclusion, there was a significant difference of the NK cell activities of the people live in the aircraft noise area of Adi Sumarmo Airport, Boyolali, Surakarta, Indonesia. Key words : noise-immune system-flow cytometric-blood mononuclear cells-health risk</p>
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