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**Extremely Low Frequency Electromagnetic Field Effects on The Histologic Properties of Rat Aorta**

**Pengaruh Paparan Medan Elektromagnetik Extremely Low Frequency (ELF) Terhadap Struktur Histologi Pembuluh Darah Aorta Pada Tikus Putih**

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**Abstract**

The exposure against extremely low frequency electromagnetic fields (ELF-EMF) increase accompanied by elevated utilization of electric equipment, especially the person living near power lines (SUTET-500 kV). The long exposure of ELF fields might affect the physiological modification and cardiovascular problems. To understand the effects of ELF-EMF to the blood vessel wall, we examined the in vivo effects of ELF fields on the histologic properties of rat aorta. A total of sixty white rats (Rattus Norwegicus), male, Wistar strain were used as experimental animals. A complete randomized factorial 3x2 design was used in the study. The first factor was the exposure intensity which consist of three sub factors. There were high exposure intensity (1,162 - 2,148 kV; 1,167 - 1,717 μT), medium exposure intensity (0,638 - 1,064 kV; 1,529 - 1,575 μT) and natural intensity (0,004 kV; 0,046 μT) as control. The second factor was the exposure duration (4 weeks and 8 weeks). Each histological section was viewed in a light microscope. The diameter and the vessel wall thickness were measured with reticule micrometer. The results showed that the interaction between the exposure intensity and the exposure duration influenced smooth muscle layer numbers. The exposed groups showed a significant decrease in the smooth muscle layer numbers since 4 weeks ($P < 0,05$). The elastine layer numbers was decrease at 8 weeks ($P$...