Perbandingan Kadar MDA dan TNF-alpha antara Pekerja Terpajan Radiasi RF dari Antena BTS dan Kelompok Tanpa Pajanan = Comparison of MDA and TNF-alpha between Workers Exposed to RF radiation from BTS Antenna and the group without exposure

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Abstrak

Tesis ini membahas mengenai pajanan radiasi RF dan dampak dari pajanan tersebut. Tujuan penelitian adalah untuk mengetahui nilai intensitas radiasi RF di dekat antena BTS dan apakah ada dampak dari radiasi RF tersebut terhadap pekerja. Penelitian ini bersifat analitis kuantitatif, menggunakan metode pengukuran dengan desain penelitian potong lintang. Hasil penelitian diperoleh bahwa hasil pengukuran kerapatan daya yang jauh di bawah NAB yaitu sebesar 1,860 W/m2 + 1,842 W/m2. Efek fisik yang dirasakan pekerja adalah rasa pusing, penurunan daya ingat dan sulit tidur. Dari hasil pengukuran mean kadar MDA pada kelompok terpajan adalah 0.302 mMol + 0,078 mMol dan mean kadar TNF-a 4,404 pg/mL + 0,504 pg/mL. Dari uji statistik terdapat perbedaan yang signifikan antara kadar MDA dan TNF-a pada kelompok terpajan dengan kelompok tanpa pajanan, namun tidak terdapat korelasi antara MDA dan TNF-a dengan usia dan masa kerja. Dari hasil pengukuran dan analisa dapat diambil kesimpulan bahwa meskipun hasil ukur nilai intensitas radiasi RF masih jauh di bawah NAB, namun kadar MDA dan TNF-a pada kelompok terpajan radiasi RF lebih besar secara signifikan dibandingkan pada kelompok tanpa pajanan.

.....This thesis discusses the RF radiation exposure and the impact of such exposure. The purpose of the study was to determine the value of RF radiation intensity near the antenna base stations and whether there are effects of RF radiation to workers. The research is a quantitative analytical, using measurement method with cross-sectional research design. The result showed that the power density measurement results are well below the TLV, which is 1.860 W/m2 + 1.842 W/m2. Workers perceived physical effects are dizziness, memory loss and difficulty sleeping. The MDA measurements result in the exposed group was 0.302 mMol + 0.078 mMol and mean levels of TNF-a was 4,404 pg/mL + 0.504 pg/mL. Statistical tests resulted significant differences between the MDA and TNF-a levels in the exposed group with no exposure group, but there is no correlation between MDA and TNF-a with age and years of service. It can be conscluded that from measurement and analysis that although the results of measuring the value of RF radiation intencity is still far below the TLV, but the levels of MDA and TNF-a on RF radiation-exposed group was significantly greater than in the group without exposure