ABSTRAK

Latar belakang  Paparan timbal pada anak masih merupakan masalah kesehatan yang penting di dunia. Anak mudah terkena keracunan timbal karena mereka belum memiliki blood brain barrier yang matang sehingga paparan timbal dapat mempengaruhi metabolisme neurotransmiter yang menyebabkan penurunan fungsi kognitif. Salah satu efek keracunan timbal adalah penurunan inteletual.

Tujuan  Menilai korelasi antara kadar timbal darah dengan intelligence quotient (IQ) pada anak

Metode  Dilakukan dengan studi cross-sectional yang dilakukan pada Agustus 2015 pada sekolah dasar berlokasi di daerah industri Sumatera Utara, usia 9 sampai dengan 12 tahun. Kami mengambil sampel kadar timbal darah dan tes IQ menggunakan TIKI. Data di analisa menggunakan uji korelasi.

Hasil  Dari 31 subyek, 16 laki-laki dan 15 perempuan, Didapatkan rata rata kadar timbal darah 2.5 \( \mu g/dL \), (SD 0.45, 95% CI 2.40-2.73). Didapatkan rata rata nilai IQ 76.5, (SD 13.0, 95% CI 71.74-81.29). Dari uji Spearman didapatkan \( r=0.025; P=0.894 \)

Kesimpulan  Tidak ada korelasi antara kadar timbal darah dengan IQ menggunakan TIKI pada anak usia sekolah dasar

Kata kunci : timbal, IQ, anak sekolah dasar
ABSTRACT

Background Childhood lead exposure is still an important health problem in the world. Children are particularly susceptible to lead poisoning because they have an immature blood-brain barrier so lead exposure can affect neurotransmitter metabolism resulted in cognitive deficits. One of lead (Pb)’s side effects is intellectual impairment.

Objective To assess the correlation between lead serum level with intelligence quotient (IQ) in school-aged children.

Methods A cross-sectional study was conducted in on August 2015 to children in elementary school located in industrial area in Medan Sumatera Utara aged within 9 to 12 years old. We took blood samples to obtain the lead serum level and IQ was measured by TIKI (tes inteligensi kolektif Indonesia). Data was analyzed using correlation test.

Result There were 31 subject in this study, 16 were boys and 15 were girls. The mean of lead serum level were was 2.5 μg/dL, (SD 0.45, 95% CI 2.40-2.73). The mean IQ was 76.5, (SD 13.0, 95% CI 71.74-81.29). From the correlation between lead serum level with IQ by using Spearman test we obtained (r=0.025, P=0.894).

Conclusion There was no correlation between lead serum level with intelligence quotient (IQ) by TIKI among school aged children.

Keywords lead serum, IQ, school-aged children

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