

ABSTRACT

**ANALYSIS ON THE EFFECT OF CHROMIUM EXPOSURE ON
CREATININE AND BUN LEVEL IN LEATHER TANNING WORKER IN
SMALL LEATHER INDUSTRY IN MAGETAN**

Chromium in the leather tanning industry can have an impact on workers' health. Chromium enters the body through skin contact, inhalation, or ingestion. Kidney disease is often referred to as a side effect from exposure to chromium. Measurement of creatinine and BUN level is a method of examining kidney function.

The purpose of this study was to analyze the effect of chromium exposure on creatinine and BUN level in leather tanning workers in the small leather industry in Magetan. This type of research was observational with cross sectional design. The sample of the study was 13 exposed worker groups, namely chromium operators and 13 unexposed groups namely administrative workers.

The results showed that there were differences in the average levels of urine chromium in chromium operators and administrative workers (p-value = 0,000), there were differences in the average creatinine levels in chromium operators and administrative workers (p-value = 0,031), and there were no difference in the average level of BUN in chromium operators and administrative workers (p-value = 0,644). There were no influence of chromium levels in urine on the increase in creatinine levels (p-value = 0,189) and BUN (p-value = 0,854) in tanning workers, with a significance value of p-value > 0,05.

The conclusion of this study had that chromium has no effect on creatinine and BUN levels. High levels of urine chromium in tanning workers indicate a health risk that requires control effort. The suggestion of this research had that the leather industry should provide an understanding of working safely against chemicals to workers and owners in the leather tanning industry. Industrial owners should provide Personal Protective Equipment (PPE). Maintain personal hygiene before, during and after work for workers. Conduct periodic health checks for tanning workers.

Keywords : chromium, creatinin, BUN, leather tanning

ABSTRAK

ANALISIS PENGARUH PAPARAN KROMIUM TERHADAP KADAR KREATININ DAN BUN PADA PEKERJA PENYAMAKAN KULIT DI INDUSTRI KECIL KULIT MAGETAN

Kromium pada industri penyamakan kulit dapat berdampak terhadap kesehatan pekerja. Kromium masuk ke dalam tubuh melalui kontak kulit, terhirup, maupun tertelan. Penyakit ginjal sering disebut sebagai efek samping dari paparan kromium. Pengukuran kadar kreatinin dan BUN merupakan metode pemeriksaan fungsi ginjal.

Tujuan penelitian ini adalah menganalisis pengaruh paparan kromium terhadap kadar kreatinin dan BUN pada pekerja penyamakan kulit di industri kecil kulit Magetan. Jenis penelitian adalah observasional dengan rancang bangun penelitian *cross sectional*. Sampel penelitian adalah 13 orang kelompok terpapar yaitu operator kromium dan 13 orang kelompok tidak terpapar yaitu pekerja administrasi.

Hasil penelitian menunjukkan bahwa terdapat perbedaan rerata kadar kromium urine pada pekerja operator kromium dan pekerja administrasi ($p\text{-value} = 0,000$), terdapat perbedaan rerata kadar kreatinin pada pekerja operator kromium dan pekerja administrasi ($p\text{-value} = 0,031$), dan tidak terdapat perbedaan rerata kadar BUN pada pekerja operator kromium dan pekerja administrasi ($p\text{-value} = 0,644$). Tidak terdapat pengaruh kadar kromium dalam urin terhadap peningkatan kadar kreatinin ($p\text{-value} = 0,189$) dan BUN ($p\text{-value} = 0,854$) pada pekerja penyamakan kulit, dengan nilai signifikansi $p\text{-value} > 0,05$.

Kesimpulan penelitian ini bahwa kromium saat ini belum menunjukkan pengaruh terhadap kadar kreatinin dan BUN. Kadar kromium urine yang tinggi pada pekerja penyamakan kulit menunjukkan adanya risiko kesehatan sehingga perlu adanya upaya pengendalian. Saran penelitian ini yaitu UPT LIK memberikan pemahaman tentang bekerja aman terhadap bahan kimia kepada pekerja dan pemilik industri penyamakan kulit. Pemilik industri menyediakan Alat Pelindung Diri (APD). Menjaga *hygiene* personal sebelum, pada saat dan setelah bekerja bagi pekerja. Melakukan pemeriksaan kesehatan secara berkala bagi pekerja penyamakan kulit.

Kata Kunci : kromium, kreatinin, BUN, penyamakan kulit