Prevalensi gangguan fungsi ginjal berdasarkan pemeriksaan Cystatin C pada pekerja dengan laju filtrasi glomerulus normal (Suatu studi pada pekerja laki-laki bagian hotpress pabrik sepatu) = Prevalence of renal disorders based on Cystatin C test in heat-exposed workers with normal glomerular filtration rate (A study on hotpress section of shoe factory workers)

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Abstrak

Latar belakang: Pekerja yang bekerja di lingkungan panas mempunyai resiko tinggi mengalami gangguan ginjal akibat dehidrasi kronis. Gangguan ginjal dapat dicegah jika kelainan dapat dideteksi dan diterapi sejak awal dimana resiko kesakitan dan kematian juga akan berkurang. Pemeriksaan yang biasa dilakukan dalam praktek sehari-hari pada saat ini adalah dengan kreatinin. Namun pemeriksaan kreatinin baru menunjukkan kelainan pada penurunan LFG lanjut. Cystatin C dikatakan bisa mendeteksi gangguan ginjal lebih awal sebelum kadar kreatinin meningkat sehingga dapat segera dilakukan tindakan pencegahan untuk menghindari kerusakan ginjal lebih lanjut.
Metode penelitian:` Penelitian dilakukan dengan desain Cross sectional. Dilakukan pada 94 pekerja laki-laki yang dipilih secara random sampling. Data dikumpulkan dengan wawancara, pemeriksaan fisik, pemeriksaan laboratorium. Kadar cystatin c serum diukur dengan metode Immunonephelometri, kreatinin diukur dengan metode enzymatik, kemudian dihitung estimasi Laju Filtrasi Glomerulus berdasar Cystatin C dan kreatinin dengan metode CKD EPI. Hasil penelitian dilakukan analisa univariate dan bivariate.
Hasil: Didapatkan prevalensi Gangguan Fungsi Ginjal dari Pemeriksaan Cystatin C pada Pekerja terpapar panas dengan Laju Filtrasi Glomerulus normal sebesar 17 %. Terdapat hubungan yang bermakna antara usia dan gangguan ginjal (p=0,000) dengan OR 13,22. Terdapat hubungan yang bermakna antara masa kerja dengan gangguan ginjal (p = 0,043) dengan OR 6,67.
Kesimpulan: LFG dengan Cystatin C dapat mendeteksi lebih dini gangguan ginjal sebelum kreatininnya meningkat dengan prevalensi 17% sehingga dengan upaya promotif dan preventif yang dilakukan diharapkan dapat mencegah gangguan ginjal lebih lanjut.
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Background: Workers who work in hot environments have a high risk of having renal disorders due to chronic dehydration. Renal disorders can be prevented if the abnormality can be detected and treated early in the beginning where the risk of morbidity and mortality is lower, as well. The common test conducted in daily practice today is the creatinine clearance test. However, creatinine clearance test shows abnormalities only in an advance reduced GFR. Cystatin C is known to be able detecting renal disorders in early stage before the creatinine level increases so that precautions can be taken to prevent a more advance renal damage.
Study Method: This study used a cross sectional design. It was conducted to 94 workers whom selected with random sampling. Data was collected by interview, physical examination, and laboratory tests. Serum level of Cystatin C was measured by the method of immunonephelometry. Creatinine was measured by enzymatic method and subsequently, Glomerular Filtration Rate was estimated based on cystatin and creatinine using

CKD EPI method. Univariate and bivariate analysis was performed to the results.
Result: The study suggest that there is prevalence of renal disorders based on Cystatin C test in heat-exposed workers with normal glomerular filtration rate by 17%. There is a significant association between age and renal disorder (p = 0,000) with OR 13.22. There is a significant relation between period of employment with renal disorder (p = 0,001) with OR 6.57.
Conclusion: Cystatin-based GFR is able to detect renal disorder at early stage before the creatinine level increases with prevalence of 17% so that further renal damage is expected to be able prevented with promotion and prevention attempts.