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Hubungan lama terpajan tekanan panas dan faktor lainnya terhadap gangguan ginjal pada pekerja hot press = The relationship long term exposure to heat stress and other factors to kidney disorder to workers in hot press area

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Abstrak

ABSTRAK
Suhu di area hot pres dalam kisaran 1650 C-185 0 C. Tingkat beban kerja ringan sampai dengan sedang, lama kerja 8 jam per hari. Upaya perlindungan tidak selalu bisa dicapai akibat faktor alam, teknis maupun faktor individu. Efek tekanan panas terhadap tubuh memberikan reaksi vasodilatasi pembuluh darah dan efek berkeringat. Belum ada data yang memberikan gambaran efek tekanan panas dalam jangka panjang terhadap fungsi ginjal. Diperlukan upaya deteksi secara dini untuk menghindari efek kerusakan ginjal yang bersifat permanen.

Metode :
Penelitian ini dilakukan secara potong lintang. Responden dipilih secara rendom. Tekanan panas diukur dengan alat Quest temp 34. Kadar cystatin C serum dianalisa dengan metode PENIA yang dijabarkan dalam estimasi laju filtrasi glomerolus dengan metode CKD EPI. Berat jenis urin diukur pada awal kerja dan akhir shift kerja. Variabel lainnya diperoleh melalui pemeriksaan fisik dan wawancara. Outcome didefiniskan sebagai gangguan ginjal yaitu kenaikan atau penurunan estimasi laju filtrasi glomerulus dibadingkan dengan nilai rerata sesuai usia dengan standar deviasi sebesar 15 ml/menit. Faktor dominan yang mempengaruhi gangguan ginjal diperoleh dari analisa multivariat dengan regresi logistik menggunakan SPSS 17,5.

Hasil :
Penelitian ini dilakukan terhadap 101 responen di area dengan tekanan panas antara 28,50 C-31,50 C (ISBB). Prevalensi gangguan ginjal sebesar 17,9%(hyperfiltrasi sebesar 16% dan hipofiltrasi 1,9%). Lama terpajan >15343 jam memiliki risiko terjadinya gangguan ginjal sebesar 7 kali lipat (OR 7,919) dibandingakan dengan lama terpajan 15343 jam dengan nilai p 0,001. Pada uji multivariat diperoleh faktor usia >29 tahun merupakan faktor risiko. Terjadi peningkatan risiko 16 kali lipat (OR16,39) pada pekerja dengan usia > 29 tahun dengan nilai p 0,000.

Kesimpulan : Prevalensi gangguan ginjal (abnormal eLFG) pada pekerja hot press sebesar 17,9% (hyperfiltrasi sebesar 16% dan hipofiltrasi 1,9%). Usia merupakan faktor dominan gangguan ginjal. Usia >29 dan memiliki risiko 16 kali lipat lebih tinggi sedangkan lama terpajan >15343 jam memiliki risiko 7 kali lipat (OR 7,919).
<hr><i>ABSTRACT
Background: Temperature in hot press area in the range 1650 C-185 0 C. Workers performed of activity with mild to medium load for 8 hours per day. Protective measures can not always be achieved due to natural factors, technical and individual factors. The effects of heat stress on the body to react vasodilatation

and sweating effect. No data that gives an explanation of the effects of heat stress in the long term on kidney function. Early detection efforts are needed to avoid the effects of permanent kidney damage.

Metode: The motode of this study is a cross-sectional basis. Respondents were selected rendom. Heat stress was measured by Quest temp 34. Cystatin C serum level was analyzed by the method PENIA which described into glomerular filtration rate estimate by the method of CKD EPI. While the urine specific gravity was measured at the beginning and end of the work shift work. Other variables obtained through physical examination and interviews. Outcome of renal disorder is defined as an increase or decrease in filtration rate estimation glomerular which is compared to an average value according to age with a standard deviation of 15 ml / min. Dominant factor affecting kidney disorders derived from multivariate logistic regression analysis using SPSS 17,5.

Result: The study was conducted on 101 responen who work in areas with hot pressure between 28.50 C to 31.50 C (WBGT). The prevalence of renal disorder was 17.9%(16% classified as hyperfiltration and 1,9% as hypofiltration). Period of long term exposure > 15343 hours had a risk of kidney disorder by 7-fold (OR 7.919 with p value of 0.001. In multivariate analysis obtained risk >29 years of age is the dominant factor of risk to kidney disorders. Occurred 16-fold increased risk (OR16,39) in workers with age> 29 years with p value of 0.000.

Conclusion: The prevalence of kidney disorder to hotpress workers at 17.9% (16% classified as hyperfiltration and 1,9% as hypofiltration). Period of long term exposure > 15343 hours had a risk of kidney disorder by 7-fold (OR 7.919). Dominant factor related to kidney disorder is age.>29 years. Occurred 16-fold increased risk (OR16,39) in workers with age> 29 years.</i>