KORELASI KADAR KHOLINESTERASE DARAH DENGAN TINGKAT KEPARAHAN VERTIGO PADA PETANI TERPAJAN PESTISIDA DI KECAMATAN NGABLAK KABUPATEN MAGELANG JAWA TENGAH

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ABSTRAK

Pestisida digunakan untuk meningkatkan hasil pertanian. Organofosfat merupakan pestisida yang banyak dipakai karena dianggap paling efektif membunuh hama dan mudah diperoleh di pasaran. Mekanisme kerjanya melalui inhibisi kholinesterase. Zat ini dapat menyebabkan keracunan pada manusia, dengan salah satu bentuk gejala keracunan organofosfat adalah vertigo. Hal ini terjadi karena organofosfat bersifat ototoksik pada organ vestibulokoklear telinga, merusak sel-sel rambut, saraf kranial ke-8, dan sistem saraf pusat.

Rancangan penelitian ini menggunakan desain penelitian potong lintang. Subjek penelitian adalah pada petani terpajan pestisida di Kecamatan Ngablak, Kabupaten Magelang pada tahun 2020. Penelitian ini menggunakan kuesioner wawancara terstruktur untuk mendapatkan data demografis, kondisi klinis, dan faktor risiko akibat pajanan pestisida. Tingkat keracunan pestisida dinilai dengan kadar kholinesterase darah, sedangkan tingkat keparahan vertigo diukur dengan nilai *Visual Vertigo Analogue Scale (VVAS).* Pemeriksaan kadar kolinesterase darah menggunakan metode Ellman.

Data yang didapatkan dianalisis secara bivariat menggunakan uji Spearman, Mann-Whitney atau Kruskal Wallis. Pada penelitian didapatkan 121 subjek petani yang memenuhi kriteria inklusi dan eksklusi, dengan rerata usia 52,26 tahun. Sebagian besar (67,8%) subjek adalah laki-laki. Dari penelitian didapatkan 91 subjek (70%) mengalami keracunan pestisida yang ditandai dengan rendahnya kadar kholinesterasi darah dan sebanyak 74 subjek (61,2%) mengalami vertigo. Hasil uji korelasi Spearman menunjukkan terdapat hubungan yang bermakna antara kadar kholinesterase darah dengan VVAS (p =0,042). Variabel tingkat kecemasan

mempunyai hubungan yang bermakna terhadap nilai VVAS (p =0,00). Analisis multivariat dilakukan pada variabel kadar kholinesterase, tingkat kecemasan dan lama kontak dengan pestisida. Hasil analisis multivariat tersebut menunjukkan kadar kholinesterase dan tingkat kecemasan mempunyai hubungan yang bermakna dengan nilai VVAS.

Terdapat korelasi yang bermakna antara kadar kholinesterase darah dengan tingkat keparahan vertigo pada petani yang terpajan pestisida di Kecamatan Ngablak, Kabupaten Magelang.

Kata kunci: vertigo, kholinesterase, petani, pestisida, organofosfat, keracunan.

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CORRELATION OF BLOOD CHOLINESTERASE LEVEL WITH VERTIGO SEVERITY IN PESTICIDE-EXPOSURED FARMERS

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ABSTRACT

Pesticides are used to increase agricultural productivity. Organophosphate is a pesticide widely used because it is considered the most effective in killing pests and is easily available in the market. Its mechanism of action is through cholinesterase inhibition, which in particular exposure can cause poisoning in humans. Organophosphates are also ototoxic to the vestibulocochlear organs of the ear, damaging hair cells, the 8th cranial nerve, and the central nervous system. These mechanism lead to vertigo.

The research design used a cross-sectional research design. The research subjects were farmers exposed to pesticides in Ngablak District, Magelang Regency in 2020. This study used a structured interview questionnaire to obtain demographic data, clinical conditions, and risk factors due to pesticide exposure. The level of pesticide poisoning was assessed by blood cholinesterase levels, while the severity of vertigo was measured by the value of the Visual Vertigo Analogue Scale (VVAS). Examination of blood cholinesterase levels using the Ellman method.

The data obtained were analyzed bivariately using Spearman, Mann-Whitney or Kruskal Wallis test. In the study, there were 121 farmer subjects who met the inclusion and exclusion criteria, with a mean age of 52.26 years. Most of the subjects were male (67.8%). From the study, it was found that 91 subjects (70%) experienced pesticide poisoning which was characterized by low blood cholinesterase levels and as many as 74 subjects (61.2%) experienced vertigo. The results of the Spearman correlation test showed that there was a significant relationship between blood cholinesterase levels and VVAS (p =0.042). The anxiety level variable also has a significant relationship with the VVAS (p =0.00). Multivariate analysis was performed for cholinesterase levels, anxiety levels and

duration of contact with pesticides. The results of the multivariate analysis showed that cholinesterase levels and anxiety levels had a significant relationship with the VVAS value.

There is a significant correlation between blood cholinesterase levels and the severity of vertigo in farmers exposed to pesticides in Ngablak District, Magelang Regency.

Keywords:
vertigo, cholinesterase, farmers, pesticides, organophosphates, poisoning

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