

Exploring the Association Between Air Pollutant Exposure and Krebs von den Lungen-6 (KL 6) Serum Levels in Outdoor and Indoor Workers in Banyumas District, Central Java

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Abstract	<p>Introduction: Indonesia ranks 8th globally in the air pollution index, with poor air quality causing premature deaths from lung ailments such as interstitial lung diseases. Krebs von den Lungen-6 (KL 6) can be used to detect lung disease caused by air pollution. However, the number of studies investigating the link between air pollutant exposure and KL-6 levels is inadequate. The present study explores the association between air pollutant exposure and KL-6 levels in workers in different settings. Methods: This cross-sectional study recruited 70 individuals who were divided into two groups. Dust levels were measured using a particle counter as a proxy for air pollutant levels. KL-6 levels were measured with ELISA. The Spearman correlation test, Mann-Whitney test, and generalized linear model were used in statistical analyses. Results and Discussion: Air pollutant exposure differed significantly between outdoor and indoor settings ($p = 0.000$). A significant difference was found in KL-6 serum levels between outdoor and indoor workers ($p = 0.000$). Air pollutant levels were inversely associated with KL-6 serum levels in outdoor ($r = -0.557$, $p < 0.05$) and indoor workers ($r = -0.360$, $p < 0.05$). Working duration did not significantly correlate with KL-6 serum levels in either group. A tendency of linear association among air pollutant exposure, overall working duration, and KL-6 serum levels was found in the multivariable model. Conclusion: Work settings were associated with varying exposures to air pollutants and KL-6 serum levels. Higher exposure to pollutants may be associated with an increase in KL-6 serum levels.Ã,Ã</p>
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Author	Dr dr. NENDYAH ROESTIJAWATI, S.Ked, M.K.K.