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CLINICAL AND BIOCHEMICAL PARAMETERS OF AGRICULTURAL WORKERS DURING MARTIAL LAW

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The state of war in which Ukrainian society is currently living poses a risk of chronic stress reactions for different cohorts of the population [1]. The overlap of several extreme factors poses a significant threat to human health [2-5]. In particular, for farmers, one of the negative environmental factors is frequent contact with pesticides [6-8]. Pesticide exposure mostly occurs during the preparation and spraying of solutions. The most common immediate effect of pesticide poisoning is headache accompanied by vomiting. In developing countries, a tiny percentage of farmers wear protective clothing when working with pesticides [9]. Thus, monitoring the health status of farmers during the war is particularly relevant.

We analysed the clinical and biochemical parameters of employees of two agricultural firms in the Korsun-Shevchenkivskiy district of Cherkasy region, obtained during a professional medical examination in 2023. The examination was carried out for men aged 30-50 years working in the field of crop production.

Standard clinical and biochemical parameters were determined: the level of total bilirubin, aspartate aminotransferase, alanine aminotransferase, alkaline phosphatase, gamma-glutamyltransferase, cholinesterase, total protein and glucose. It was found that in one of the groups, the average value of total bilirubin exceeded the upper limits of the reference value, the level of alanine aminotransferase was at the upper level, and the level of cholinesterase and glucose was shifted to the upper value of the norm. In the group from another agricultural company, the values were within the normal range. Given the large variability in the first group, a statistically significant difference between the groups was observed only in the levels of aspartate aminotransferase and gamma-glutamyltransferase (significantly higher in the first group). However, gamma-glutamyltransferase levels in both groups were within normal limits. Workers in both groups worked equally with pesticides, contact with which could have caused the observed effects.

Conclusions: Thus, there was a significant variation in clinical and biochemical parameters in the examined farmers. Cases of a significant increase in liver fractions in the first group could be due to the fact that workers with such results have a longer work experience and, accordingly, have been chronically exposed to pesticides. Additional research is needed to draw more accurate conclusions.

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