

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ**



МАТЕРІАЛИ

**106-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького колективу
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Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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monotonous increase in the DC content, reaching maximum values on the 30th day after irradiation: 125%, 116%, 124%, and 105% in groups 1, 2, 3, and 4, respectively. In group 2, a decrease in DC content was observed on the 10th day.

After irradiation, MDA content in the experimental groups (1, 3, and 4) decreased by 29%, 40%, and 44%, respectively. After 10 days, MDA levels remained lower than control values in groups 1, 3, and 4, and reached maximum values in experimental groups 1 and 3 after 30 days (124% and 113%, respectively). Changes in MDA content in the liver in group 2 were phase-like: an increase on the first day after irradiation, a decrease after 10 days (79%), followed by an increase on the 20th day. After 30 days, MDA content in group 2 approached control values.

Conclusions. The investigation of the dynamics of lipid peroxidation (LPO) post-radiation processes suggests that the effect of prolonged low dose X-ray irradiation on the content of LPO products has a reversible nature for almost all the irradiation doses used (on the 30th day, MDA and DC content approached control values).

Kashul S.V.

FEATURES OF CHANGES IN RED BLOOD CELLS COUNT WITH OXIDATIVE STRESS BACKGROUND IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS COMORBIDITY WITH HYPOTHYROIDISM

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Introduction. Chronic obstructive pulmonary disease (COPD) is becoming more common in the world, especially in developing countries. By 2050, the number of patients may reach 600 million people (Boers et al., 2023). Financial losses directly related to COPD can range from 2,000 to 10,000 euros per patient each year (Ehteshami-Afshar et al., 2022). COPD is often associated with the presence of various concomitant diseases as well. Also, the prevalence of hypothyroidism among patients with COPD is significantly higher than in the general population and can be as much as 37% (Arrey Agbor et al., 2024).

The aim of the study. To ascertain red blood cells (RBC) count changes and alterations of reduced glutathione (GSH) in COPD and its combination with hypothyroidism.

Material and methods. We performed blood tests for blood count and plasma GSH (Travina method modified by Meshchyshen) in 30 patients with COPD, including 10 persons with diagnosed hypothyroidism, and did the same in 25 controls.

Results. All patients with COPD had significantly lower mean values of GSH than in the control group: $0,82 \pm 0,069$ vs $0,95 \pm 0,054$ $\mu\text{mol/L}$ ($p < 0,05$). Depending on the presence of concomitant hypothyroidism, a significant difference in the parameters of oxidative stress was found, too. GSH levels were lower in COPD patients with hypothyroidism than in others ($0,68 \pm 0,073$ vs $0,98 \pm 0,085$ $\mu\text{mol/L}$, $p < 0,01$). RBC counts also differed: it was significantly higher in COPD patients without hypothyroidism than controls, as expected for respiratory pathology ($4,89 \pm 0,24$ vs. $4,21 \pm 0,19$ T/l, $p < 0,01$). Whereas, in comorbid patients, it was significantly lower than in COPD patients without hypothyroidism ($4,42 \pm 0,29$ vs $4,89 \pm 0,24$ T/l, $p < 0,05$), and there was no significant difference with the control. A correlation of the RBC count with GSH was moderate and positive ($r = 0,62$, $p < 0,05$ in the subgroup of patients without comorbidity and $r = 0,57$, $p < 0,05$ in the subgroup of COPD patients with hypothyroidism).

Conclusions. This study confirms that the high impact of environmental and inner-generated active oxygen radicals in COPD pathogenesis. Decreasing of glutathione, which is the main component of the antioxidant system of cells, erythrocytes in particular, occurs in COPD, especially in its comorbidity with hypothyroidism. This evidence should be further assessed.