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(PB3288) COMPARATIVE ANALYSIS OF THE USE OF IMMUNOGLOBULIN REPLACEMENT THERAPY IN PATIENTS WITH ACUTE LEUKEMIA.

Topic: 30. Infections in hematology (incl. supportive care/therapy)

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Background:

Maintaining passive immunity is relevant due to the importance of optimizing the strategy for managing patients with acute leukemia at all stages of program therapy, reducing the risks of developing infectious complications and improving the prognosis of patient survival and economic efficiency.

Aims:

The purpose of this study in real clinical practice was to evaluate the independent effect of immunoglobulin replacement therapy on the risk of developing infectious complications in patients with acute leukemia at the stages of intensive care, and also to compare the results of using immunoglobulin replacement therapy in patients with acute leukemia in different years on the basis of the hematology department No. 3 State Institution “Minsk Scientific and Practical Center for Surgery, Transplantology and Hematology”.

Methods:

The prospective studies (2018-2022) included 130 adult patients diagnosed with acute leukemia who received the induction stage of therapy: (“7+3”, FLAG-Ida, Hyper-CVAD/HMA, CALGB, ALL-2009). The following statistical methods were used in the study: time-dependent Kaplan-Meier analysis with a log-rank test, non-parametric methods for assessing differences in groups (odds ratio). The analysis assessed the number of patients needed to achieve an additional positive outcome, as well as 120-day infection-free survival. Differences were considered statistically significant if the probability of an error-free prediction was 95% ($p \leq 0.05$).

Results:

The study was aimed at obtaining comparative data on the risk of developing episodes of infections in patients in groups with and without immunoglobulin replacement therapy. The Kaplan-Meier analysis data show that the use of immunoglobulin replacement therapy (IRT) independently affects the duration of the period of specific therapy for the underlying hematological disease without infectious episodes. The probability of developing an infectious episode in patients with acute leukemia receiving specific treatment (induction course of polychemotherapy) is statistically significantly lower in the group of patients receiving immunoglobulin replacement therapy compared to the control group without administration of human immunoglobulin (5 versus 14; $p = 0.00724$). This effect was statistically significant because the lower limit of the two-sided 95% confidence interval for the odds ratio was >1.0. Fixed effects analysis yielded an odds ratio estimate of 2.42 (95% CI 1.86–3.16). Random-effects analysis estimated a mean odds ratio of 2.58 (95% CI 1.67–3.99), indicating that patients treated with immunoglobulin replacement therapy were more likely to have a favorable outcome compared with patients not treated with immunoglobulin replacement therapy in 2.58 times. (Figure1).

Summary/Conclusion:

Despite the differences between studies, in almost all cases, immunoglobulin replacement therapy shows better results

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compared to therapy without immunoglobulin administration, indicating a positive overall effect of immunoglobulin replacement therapy on the prevention and treatment of infectious complications.

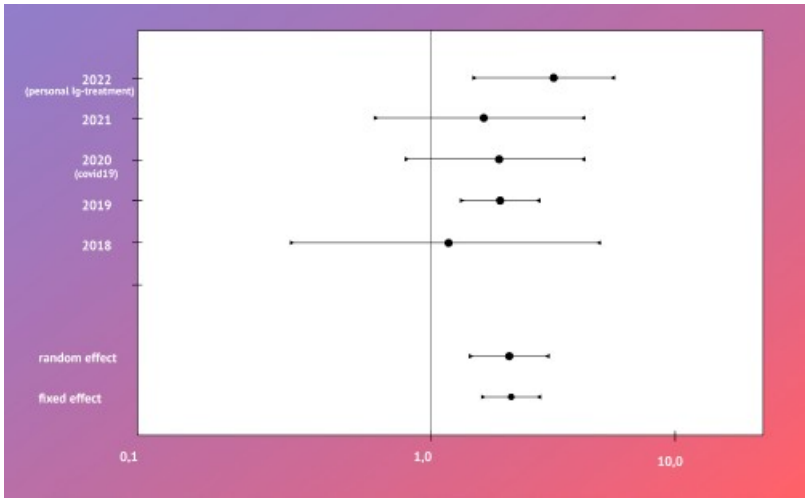

Figure 1. The results of a comparative analysis of the use of immunoglobulin replacement therapy for patients with AL in different years on the basis of the hematology department No. 3 of the State Institution "Minsk Scientific and Practical Center for Surgery, Transplantology and Hematology"

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