HemaSphere

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(PB3280) MICROBIOLOGIC CHARACTERISTIC OF BLOODSTREAM INFECTIONS IN PATIENTS WITH ACUTE LEUKEMIA

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

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Background:

Bloodstream infections are life-threatening illness for patient with acute leukemia.

Aims:

Assessment of the Microbiological characteristics of bactereimas in patients with acute leukemia.

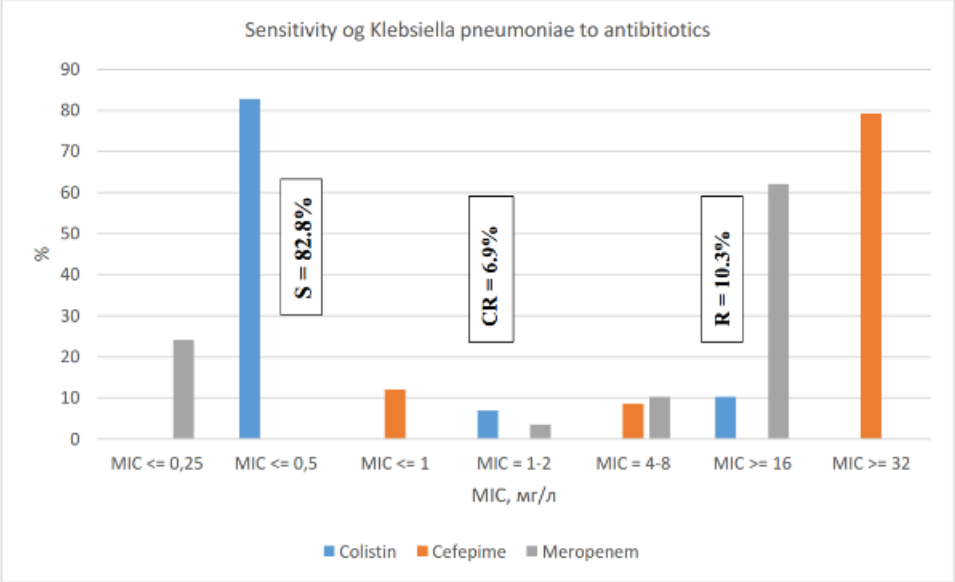
Methods:

The study included 89 patients with various variants of acute leukemia who were treated in the Hematology Department №3 of the State Institution "Minsk Scientific and Practical Center for Surgery, Transplantology and Hematology" in Minsk of the Republic of Belarus in the period from 2020 to 2023. According to the nosological characteristics, the patients were distributed as follows: acute myeloid leukemia (AML) - 74 (83.2%); acute lymphoblastic leukemia (ALL) - 14 (15.7%); acute leukemia with mixed phenotype - 1 (1.1%) patient. Of these, 46 (51.7%) are men, 43 (48.3%) are women aged 21 to 71 years, the median age is 63 years. The study included samples of venous blood (N=133) in patients with febrile neutropenia (from one to three episodes of taking biological material from one patient) for bacterial culture and determination of antibiotic sensitivity (strains of bacteria, as well as their sensitivity to antibiotics were identified with the help of VITEK2-compact). Blood sampling from patients for bacterial culture was carried out when their temperature increased.

Results:

Blood flow infection caused by gram-positive (16.5%) was detected in the samples of blood: Staphylococcus (epidermidis, hominis, aureus, coagulase negative) - 17 (12.8%); Enterococcus (faecalis, gallinarum) - 5 (3.7%); as well as gram-negative (83.5%) microorganisms: Klebsiella pneumoniae - 58 (43.6%); Escherichia coli - 46 (34.6%); Acinetobacter baumannii - 4 (3%); Pseudomonas aeruginosa - 1 (0.8%); Enterobacter cloacae - 2 (1.5%). Resistant to cefepime: Klebsiella pneumoniae - 52 (89.7%), Escherichia coli - 21 (46.7%); to meropenem: Klebsiella pneumoniae - 44 (75.9%), Escherichia coli - 1 (2.2%); to colistin: Klebsiella pneumoniae - 5 (8.6%), Escherichia coli - 1 (2.2%). The sensitivity of microorganisms to antibacterial drugs was assessed by the minimum inhibitory concentration (MIC), among which sensitive (S), MIC ≤ 0.25-1; conditionally resistant (CR), MIC 1-8; resistant (R), MIC ≥16-32. The result are depicted in the image provided.

Abstract Book Citations: Authors, Title, HemaSphere, 2024;8:(S1):pages.



Summary/Conclusion:

\1. In the structure of bacterial agents in patients with acute myeloid leukemia against the background of chemyotherapy on the basis of one medical center, gram-negative microorganisms (83.5%) with the predominant release of Klebsiella pneumoniae (43.6%) and Escherichia coli (34.6%) prevail.

\2. The most significant and common bacterial agent Klebsiella pneumoniae has the least sensitivity to beta-lactam antibiotics (cephalosporins - 10.3%, carbapenems - 24.1%), but there is a high sensitivity to colistin (91.4%).

\3. The largest number of Klebsiella pneumoniae (82.8%) sensitive to colistin is in the MIC range ≤ 0.25-1.

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