Objectives
The objectives of this study were to evaluate the possibility of the discontinuation of antibiotics in neutropenic patients with newly diagnosed AML undergoing induction and consolidation chemotherapy.

Methods
The prospective study was performed from April 2013 till October 2014. Patients with newly diagnosed AML were included in the study.

Results
38 patients (15-men, 23-female) were included in the study. The median age was 41 (17-83). This patients received 105 (55 induction and 50 consolidation) chemotherapy cycles (67.5% - "3+7", 18.1% - high-dose AraC, 8.6% - low-dose AraC, 2.9% - azacitidine, 2.9% - other). Hyperleukocytosis was in 53% (20/38) of patients. ECOG score ≥ 3 had 76% (29/38) of patients. Duration of neutropenia (median) was 18 (3-55) days. The antibiotics were administered in 92% (97/105) of chemotherapy cycles (53% in induction, 47% in consolidation).

The antibiotics were discontinued in 30% (29/97) chemotherapy cycles in patients with persistent neutropenia (69% in induction, 31% in consolidation). At the time of antibiotic discontinuation WBC count (median) was 0.6x10^9/L (0.1-0.9), duration of neutropenia (median) was 25 (5-43) days, duration of antibiotics (median) was 12 (4-36) days. In this group of patients 62% (18/29) had fever of unknown origin and 38% (11/29) had clinically or microbiologically documented infection; 24% (7/29) were admitted to the ICU, 66% (19/29) were colonized with resistant Gram-negative bacteria.

Fever relapsed in 34% (10/29) of patients on induction chemotherapy cycles, nobody had recurrent fever on consolidation chemotherapy cycles. At the time of antibiotic discontinuation the median WBC count was 0.3x10^9/L (0.1-0.9) in patient with recurrent fever versus 0.8x10^9/L (0.5-0.9) in the group without fever relapse (p=0.007). The median time from antibiotic stop till the recovery from neutropenia was 15.5 (10-24) days in patients with relapsed fever versus 9 (1-20) days in patients without fever recurrence (p=0.01). The median duration of antibiotic treatment in patient with recurrent fever was 21.5 (15-33) days and in patients without fever relapse – 19 (7-36) days. No patients died in the group in which antibiotics were discontinued.

Conclusion
The antibiotic therapy can be stopped in AML patients during persistent neutropenia. Fever relapsed in 30% of patients but it did not affect mortality. The recurrence of fever was observed in patients with more profuse neutropenia.