

UTILIZATION OF ANTIBIOTICS IN A UNIVERSITY TEACHING HOSPITAL

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BACKGROUND

Inappropriate use of antimicrobials increases hospital expenditures, leads to the increase of antimicrobial resistance and raises the risk of adverse drug reactions. In order to improve the state of antibiotic therapy it is essential to analyze the current status of antibiotic utilization in local hospital settings.

OBJECTIVES

To determine the patterns of antibiotic use in a large university teaching hospital (Smolensk, Russia).

MATERIALS AND METHODS

Data on the use of antimicrobial agents in a 1,350-bed and 30-wards Smolensk University Teaching Hospital (SUTH) in 1997 and 2000 were collected from hospital records. The use of antibiotics was expressed as the number of defined daily doses (DDDs) per 100 bed-days (b-d).

RESULTS

The most amount of antibiotics were utilized in 1997 with 36.09 DDDs/100 b-d in comparison to 31.54 DDDs/100 b-d in 2000. Among all groups of antibiotics penicillins were the most commonly prescribed in all years. The consumption of penicillins was 15.35 DDDs/100 b-d in 1997 and 18.83 DDDs/100 b-d in 2000. It was followed by aminoglycosides with 7.48 DDDs/100 b-d in 1997 and 4.01 DDDs/100 b-d in 2000. In 1997 lincosamides were the third group of antibiotics with the most consumption - 5.46 DDDs/100 b-d, in 2000 this place was for tetracyclines with 2.18 DDDs/100 b-d.

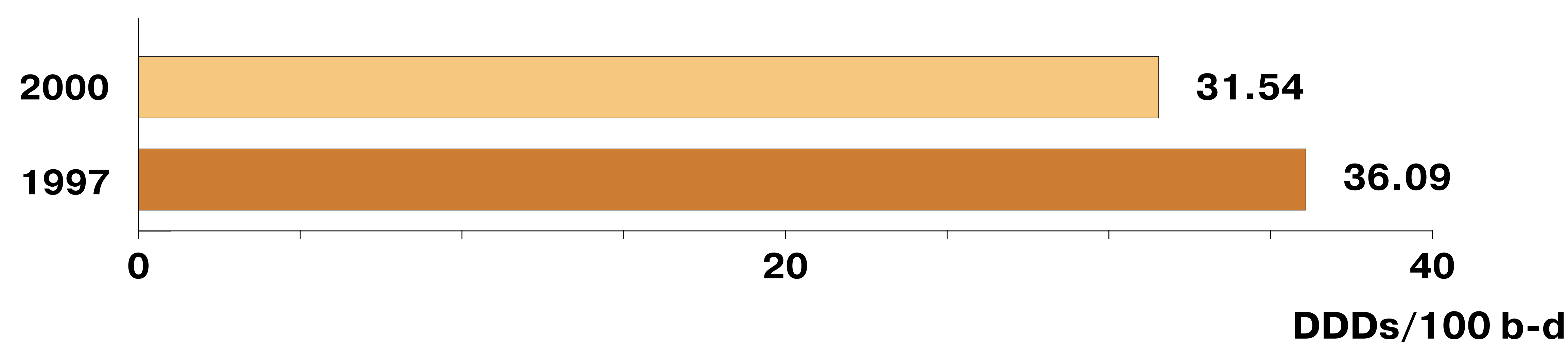


Fig. 1. Utilization of antibiotics in SUTH in 1997 and 2000

Among individual antibiotics gentamicin was the leader in 1997 with 6.46 DDDs/100 b-d and it was followed by lincomycin with 5.46 DDDs/100 b-d, ampicillin 5.22 DDDs/100 b-d, oxacillin 4.66 DDDs/100 b-d and penicillin G 4.06 DDDs/100 b-d. In 2000 the most commonly prescribed drug was penicillin G with 9.54 DDDs/100 b-d, it was followed by ampicillin - 5.68 DDDs/100 b-d, gentamicin - 3.97 DDDs/100 b-d, oxacillin - 3.6 DDDs/100 b-d and doxycycline - 1.92 DDDs/100 b-d.

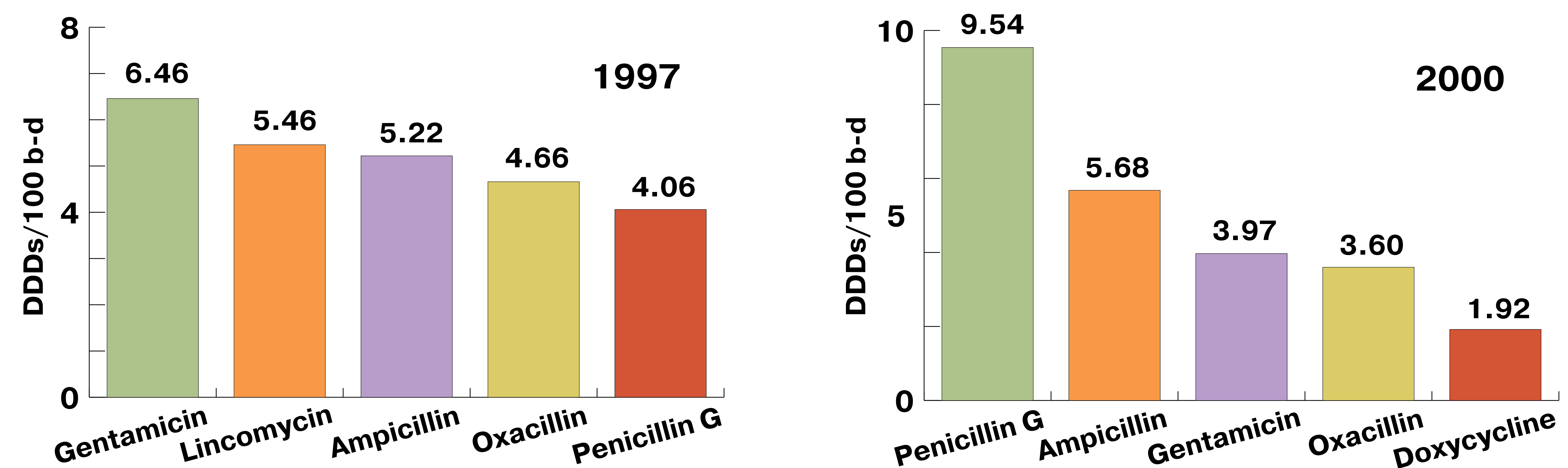


Fig. 2. Consumption of leading antibiotics in SUTH in 1997 and 2000

CONCLUSIONS

The study has shown that the leaders in consumption in all years are inexpensive and traditionally prescribed antibiotics.

Of an interest is the high consumption of penicillin G, ampicillin and gentamicin, which are known for antibiotics with the high level of resistance.

Cephalosporins, carbapenems, fluoroquinolones are still at the lowest level of consumption among other groups of antimicrobials.