

RETROSPECTIVE ANALYSIS OF THE VARIATIVITY OF SUPPLY OF THE MOST DEMANDED ANTIBIOTICS IN THE TERRITORY OF THE REPUBLIC OF UZBEKISTAN

Azimova N.A.

Rakhimov A.A.

Pharmaceutical Institute of Education and Research, Tashkent city, Republic of Uzbekistan

e-mail: anozima637@gmail.com

<https://doi.org/10.5281/zenodo.17332627>

Relevance: Analysis of supply stability assesses the reliability and predictability of logistical processes by measuring indicators such as failure frequency, delivery times, and service quality to ensure timely delivery of goods and minimize risks. The pharmaceutical industry is more dependent than ever on the stability of drug supplies, as it directly affects human lives. Today, the group of antibiotic drugs remains one of the most in-demand drugs in domestic conditions. In this regard, we decided to retrospectively analyze how stable the supply of the sought-after group of drugs is in the territory of the Republic of Uzbekistan.

The purpose of the study: is to analyze the stability of the supply of the most in-demand antibiotics in the territory of the Republic of Uzbekistan using the coefficient of variation.

Materials and methods: "Drug-Audit" monthly summary data on the supply of the most in-demand antibiotics for 2018-2022 were used as research material. The demand criterion was the stability of supplies throughout the studied period and the relative advantageous market share over the periods compared to the remaining antibiotics. As a method, a previously tested variation coefficient methodology was used, where for each delivery by month in individual years and for each international non-patented name of antibiotics (INN) in packaging, the variation of delivery was calculated according to the formula.

$$\sigma = \sqrt{\frac{\sum_{i=1}^n (X_i - X_{cp})^2}{n-1}}; V = \frac{\sigma}{X} \cdot 100\%$$

Results: the main generalized results are presented in the table. According to received the results showed that overall, the entire domestic market segment for antibiotics demonstrated relative stability in supply.

Data	The entire antibiotics market	Amoxicillin, Amoxicillin + Clavulanic acid	Ampicillin, Ampicillin + Sulbactam, Ampicillin + Oxacillin	Benzatin benzylpenicillin	Cefazoline	Cefepim, Cefepim+ tazobactam, Cefepim+ sulbactam	Cefotaxime	Ceftriaxone, Ceftriaxone + tazobactam, Ceftriaxone + sulbactam	Ciprofloxacin, Ciprofloxacin + tinidazole, Ciprofloxacin + ornidazole	Phosphomycin	Levofloxacin	Metronidazole, Metronidazole + Miconazole	Nitrofurantoin	Nitroxoline	Ofloxacin, Ofloxacin + Tinidazole, Ofloxacin + Onidazole	Cefixim
2018 y.	46%	120%	72%	143%	86%	167%	102%	62%	31%	68%	43%	35%	53%	62%	64%	95%
2019 y.	19%	63%	73%	114%	51%	102%	73%	36%	45%	80%	41%	40%	41%	54%	79%	60%
2020 y.	26%	75%	54%	83%	67%	136%	63%	42%	50%	71%	53%	34%	52%	65%	67%	95%
2021 y.	30%	36%	62%	121%	56%	88%	68%	33%	26%	118%	87%	63%	94%	92%	33%	72%
2022 y.	23%	46%	42%	128%	76%	102%	70%	47%	63%	114%	34%	29%	54%	79%	44%	46%

The most stable year was 2019, when the coefficient of variation decreased to 19% and by the end of the study period (2022), this indicator reached 23%. Also, among the studied sample of



antibiotics according to INN, the most stable were "Ceftriaxone," "Ceftriaxone + Tazobactam," "Ceftriaxone + Sulbactam," "Ciprofloxacin," "Ciprofloxacin + Tinidazole," "Ciprofloxacin + Ornidazole," and "Metronazole," "Metronazole + Myconazole."

Conclusions: The domestic market segment of antibiotics is generally stable in terms of supplies, and deficiency phenomena are not characteristic of this group, except for individual antibiotics according to INN.