

## OUTPATIENT USE OF ANTIBIOTICS IN THE REPUBLIC OF SRPSKA: 2019 VS. 2020

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COVID-19 disease caused by the SARS-CoV-2 virus, since December 2019, was being treated with a variety of antivirals, antibiotics (1), and antifungals. This study aims to analyze the outpatient use of antibiotics in the Republic of Srpska during the first year of COVID-19 pandemic. A pharmacoepidemiologic analysis in the Republic of Srpska (Srpska) was performed from 2019 to 2020, based on drug utilization data obtained from the Public Health Institute (PHI). Drug utilization analysis was undertaken using the ATC (Anatomical Therapeutic Chemical classification)/DDD (Defined Daily Dose) methodology, which is the internationally accepted methodology for measuring medicine utilization within and across populations. DDDs were defined as the amount of drug most used in adults for the most common indication. Data on outpatient antibiotic utilization were expressed in DDD/1,000 inhabitants/day (DIDs) for comparative purposes (2). Utilization of antibiotics in 2020 compared to 2019 had increased significantly for antibiotics ATC groups with highest DIDs in Srpska - J01C (61.31%), J01D (121.4%) and J01F (55.85%). There has been decrease in utilization for J01E (16,8%), J01X (17.13%) and J01G (24.31%), thus these were the J01 groups with lowest DIDs in Srpska. Antibiotics should not be used as a means of preventions or treatment for SARS-CoV-2 virus unless bacterial co-infection was present. Further research is needed to evaluate immediate and long-term impact of antibiotic prescribing trends on specific antibiotic groups closely associated with increased resistance.

### References

1. Silva TM, Estrela M, Gomes ER, Piñeiro-Lamas M, Figueiras A, Roque F, Herdeiro MT. The impact of the COVID-19 pandemic on antibiotic prescribing trends in outpatient care: A nationwide, quasi-experimental approach. *Antibiotics*. 2021 Sep;10(9):1040.
2. WHO (2017). *WHO Collaborating Centre for Drug Statistics Methodology. ATC/DDD Index*. Available online at: <https://www.whocc.no/>

## VANBOLNIČKA UPOTREBA ANTIBIOTIKA U REPUBLICI SRPSKOJ: 2019. VS. 2020. GODINA

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Bolest COVID-19 uzrokovana SARS-CoV-2 virusom je od decembra 2019. godine liječena nizom antibiotika (1), kao i antivirusnih i antigljivičnih lijekova. Ova studija je imala za cilj da procijeni vanbolničku upotrebu antibiotika u Republici Srpskoj tokom prve godine COVID-19 pandemije. Provedena je farmakoepidemiološka analiza u Republici Srpskoj (Srpska) u periodu od 2019. do 2020. godine, a na osnovu podataka dobijenih iz Instituta za javno zdravlje Republike Srpske (IZJZRS). Analiza upotrebe lijekova je vršena koristeći ATC (anatomsko-terapijsko-hemijsku klasifikaciju)/DDD (definisana dnevna doza) metodologiju kao internacionalno priznatu metodologiju za procjenu upotrebe lijekova u populaciji. DDD je definisana kao prosječna doza održavanja lijeka kada se on upotrebljava kod odraslih osoba, a za osnovnu indikaciju. Podaci za upoređivanje su izražavani u DDD/1000 stanovnika/dan (DDD/1000/dan) (2). Upotreba antibiotika je u 2020. godini u poređenju sa 2019. godinom bila značajno viša za J01 ATC grupe koje su imale najviše DDD/1000/dan u Srpskoj, a to su: J01C (za 61.31%), J01D (za 121.4%) i J01F (za 55.85%). Sa druge strane, uočen je i pad upotrebe antibiotika unutar ATC grupa: J01E (za 16,8%), J01X (za 17.13%) i J01G (za 24.31%), ali to su J01 grupe antibiotika sa najnižim vrijednostima DDD/1000/dan u Srpskoj. Antibiotici se ne bi smjeli upotrebljavati za prevenciju i liječenje SARS-CoV-2 virusa osim ako je istovremeno prisutna i bakterijska infekcija. Dalja istraživanja su potrebna da bi se procijenio uticaj ovakvog trenda propisivanja antibiotika na specifične grupe antibiotika usko vezane za povećanu rezistenciju.

### Literatura

1. Silva TM, Estrela M, Gomes ER, Piñeiro-Lamas M, Figueiras A, Roque F, Herdeiro MT. The impact of the COVID-19 pandemic on antibiotic prescribing trends in outpatient care: A nationwide, quasi-experimental approach. *Antibiotics*. 2021 Sep;10(9):1040.
2. WHO (2017). WHO Collaborating Centre for Drug Statistics Methodology. ATC/DDD Index. Available online at: <https://www.whocc.no/>