



Assessing the availability of forgotten antibiotics through the Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS)

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BACKGROUND & OBJECTIVES

Unequal access to or non-availability of antibiotics remains a global public health problem in low-, middle-, and high-income countries.

Aim : Assess the use of forgotten antibiotics worldwide.

METHODS

- Selection of 18 forgotten antibiotics, retrieved from the 2021 WHO-EML list and selected from Tebano et al. (<https://pubmed.ncbi.nlm.nih.gov/31260741/>, excluding formulations specifically for paediatric use)
- Classified according to WHO AWaRe classification: Access (n=7), Watch (n=7), Reserve (n=5).
- Oral fosfomycin = Watch antibiotic; Parenteral fosfomycin = Reserve antibiotic.
- Merged Global-PPS data from 87 countries, including 969 hospitals that participated at least once from 2015 to 2021 were analysed.
- Denominators = total number of prescribed antibacterials for systemic use (ATC=J01).

RESULTS : Prevalence (%) of forgotten antibiotics (ATC J01) prescribed worldwide by UN region (years 2015-2021)

	Africa	Australia & New Zealand	East & South Asia	East Europe	North America	North Europe	South America	South Europe	West & Central Asia	West Europe
N antibiotics (ATC=J01; denominator)	29890	2186	72097	5066	14346	7283	17133	17017	12372	27695
N forgotten antibiotics	4007	255	10744	693	2064	1503	3004	2035	1586	3536
% forgotten antibiotics	6.4	5.3	7.3	6.7	6.3	10.0	8.3	5.6	6.2	6.0
Access ABs (% of forgotten ABs)	79.4	64.7	42.9	44.9	44.4	50.3	26.3	27.4	47.4	35.5
Ampicillin/sulbactam (%)	3.08		1.89	2.68	0.25		0.93	0.48	2.17	0.27
Benzathine benzylpenicillin (%)	0.19		0.05		0.05	0.03	0.11	0.08	0.07	0.01
Benzylpenicillin (Pen G) (%)	0.99	2.70	0.77	0.10	0.53	3.25	0.17	0.47	0.17	0.62
Cloxacillin IV (%)	0.62		0.33		0.93	0.41	0.78	0.40	0.46	0.04
Nitrofurantoin (%)	0.19	0.73	0.08	0.24	1.03	1.07	0.20	0.12	0.05	1.19
Pivmecillinam (%)						0.29				
Spectinomycin (%)										
Watch ABs (% of forgotten ABs)	5.0	28.4	25.5	16.7	32.3	38.0	32.1	43.2	8.9	41.8
Cefoxitin (%)	0.14	0.05	0.91		0.17	0.03	0.11	0.27	0.02	0.05
Ertapenem (%)	0.13	0.14	0.44	0.97	0.71	0.40	1.54	0.79	0.35	0.01
Fosfomycin oral (%)	0.00	0.14	0.04	0.02	0.11	0.04	0.03	0.08		0.34
Teicoplanin (%)	0.03	0.23	0.42	0.04		2.73	0.97	1.15	0.18	0.20
Temocillin (%)						0.05				1.55
Ticarcillin/clavulanic acid (%)		0.05	0.01	0.02		0.01				0.00
Tobramycin (%)	0.01	0.91	0.03	0.08	1.03	0.55	0.02	0.16		0.38
Reserve ABs (% of forgotten ABs)	15.6	6.0	29.9	37.8	19.6	4.0	41.5	28.9	43.7	20.5
Aztreonam (%)		0.05	0.12	0.04	0.23	0.77	0.01	0.03		0.13
Cefepime (%)	0.86	0.14	1.44	1.97	1.05	0.05	1.73	0.94	1.54	0.97
Colistin (%)	0.12	0.18	0.45	0.26	0.17	0.32	0.97	0.62	1.16	0.23
Fosfomycin IV (%)	0.01		0.08	0.14		0.03	0.05	0.07	0.01	0.05
Polymyxin b (%)	0.00		0.20	0.18			0.71			

Note: empty cells=no use; ABs=antibiotics

- 401,353 admitted inpatients
- 156,827 (39.1%) were treated with at least one antimicrobial (AM).
- Out of 231,508 antimicrobials, 205,085 (88.6%) were antibacterials for systemic use (ATC J01).

CONCLUSION

- This global study analysed whether certain forgotten antibiotics are effectively available and/or used in daily clinical practice.
- Particularly in areas with high prevalence of multidrug resistant bacteria in LMIC as well as HIC; the availability of forgotten antibiotics may play an important role.
- Global-PPS data linked with a list of approved antibiotics by official drug regulatory agencies or national ministries of health can provide more insight on prescribing practices at country level.
- In-depth research is needed on the unavailability of forgotten antibiotics at the national level in the fight against AMR.
- Regulatory agencies have an important role to play in taking on this responsibility.

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