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Editorial

The Fading Efficacy of the Watch Group: A Crisis in Antibiotic Stewardship

Antibiotic resistance has emerged as one of the greatest public-health crises of the twenty-first century. The discovery of antibiotics once revolutionized modern medicine, making once-fatal infections curable. However, decades of overuse, misuse, and inadequate stewardship have pushed us to the brink of a post-antibiotic era. Current estimates suggest that antimicrobial resistance (AMR) could claim 10 million lives every year by 2050, surpassing cancer as a leading cause of death if urgent global action is not taken.[1]

The Role of the WHO AWaRe Classification

To address irrational prescribing, the World Health Organization (WHO) introduced the AWaRe classification—categorizing antibiotics into Access, Watch, and Reserve groups.[2,3]

- **Access group** antibiotics, such as amoxicillin, doxycycline, and gentamicin, are recommended as first-line choices with a lower potential for resistance.
- **Watch group** antibiotics—such as ceftriaxone, azithromycin, ciprofloxacin, and meropenem—are critically important for severe infections but have a higher potential for selecting resistant strains.
- **Reserve group** antibiotics, including colistin and linezolid, are considered last-resort options for multidrug-resistant pathogens.

The AWaRe framework helps countries and hospitals prioritize antibiotic stewardship, monitor usage trends, and guide procurement policies. Yet, despite these efforts, resistance within the Watch group is rising at an alarming pace, threatening the efficacy of our most relied-upon treatments for pneumonia, sepsis, urinary-tract infection, and typhoid fever.

Over the past decade, surveillance data have shown a worrying trend—bacteria that were once susceptible to Watch antibiotics are now exhibiting high resistance rates. Third-generation cephalosporins like ceftriaxone and ceftazidime, once considered lifesaving, are now frequently rendered ineffective by extended-spectrum β-lactamase (ESBL)-producing Enterobacteriaceae. Likewise, resistance to fluoroquinolones (e.g., ciprofloxacin) and macrolides (e.g., azithromycin, clarithromycin) is rising sharply. Multiple surveillance studies and hospital antibiograms demonstrate a strong association between prior exposure to Watch group antibiotics and the isolation of multidrug-resistant (MDR) bacteria.[3,4,5]

Why Resistance Emerges—A Clinical and Systemic Perspective

Several interconnected factors contribute to this growing threat:

1. **Overuse and Misuse –** Watch group antibiotics are often prescribed unnecessarily for viral infections or as "coverage" without diagnostic confirmation. Ceftriaxone and azithromycin, for instance, are frequently used empirically for fever or sore throat, even when not indicated.
2. **Empirical Shifts Due to Prior Resistance –** As resistance to older drugs like ampicillin or cotrimoxazole rises, clinicians shift empirically toward third-generation cephalosporins or carbapenems, accelerating the resistance cycle.
3. **Weak Antimicrobial Stewardship –** In many low- and middle-income countries (LMICs), antimicrobial-stewardship programs remain under-resourced. Lack of prescription audits, poor infection-control practices, and over-the-counter sales of antibiotics contribute significantly.
4. **Hospital and Community Transmission –** Resistant organisms spread rapidly between patients via healthcare workers, surfaces, and wastewater. Studies from China and India demonstrate that hospital wastewater often contains large reservoirs of resistant bacteria.[6]
5. **Pharmaceutical and Policy Gaps –** Limited enforcement of drug-control regulations and inadequate incentives for developing new antibiotics compound the crisis.

The Role of Surveillance in monitoring Resistance

Effective monitoring of resistance patterns is fundamental to combating antimicrobial resistance (AMR). Surveillance tools such as antibiograms provide localized insights into pathogen susceptibility, enabling clinicians to make evidence-based decisions and guiding hospitals in updating empirical therapy protocols. At a broader level, well-implemented National Action Plans (NAPs) can significantly reduce antibiotic consumption through coordinated policies and stewardship programs. Global surveillance systems like the World Health Organization's Global Antimicrobial Resistance and Use Surveillance System (GLASS) facilitate international data sharing and

trend analysis, helping countries track emerging resistance threats. Additionally, wastewater and environmental monitoring serve as crucial early-warning systems by identifying hidden reservoirs of resistant organisms within communities, allowing timely interventions to prevent wider outbreaks.

Consequences for Clinical Practice

The consequences of rising resistance among Watch-group antibiotics have serious clinical and economic implications. As first-line agents such as ceftriaxone or ciprofloxacin lose effectiveness, clinicians are forced to rely on more expensive or toxic alternatives like carbapenems or colistin, limiting treatment options and increasing the risk of adverse effects. Treatment failures necessitate prolonged hospitalization, escalating healthcare costs, patient morbidity, and mortality. Additionally, reliance on empirical therapy can delay definitive diagnosis, allowing resistant infections to persist and spread. Beyond the clinical impact, antimicrobial resistance imposes a heavy economic burden through longer illnesses, reduced productivity, and inefficient use of healthcare resources.

The Need for Clinician-Led Stewardship

Addressing resistance in the Watch group antibiotics requires frontline clinician ownership along with policies. Every clinician must view antibiotics as a shared resource—precious, finite, and requiring protection.

1. **Culture-Based Prescribing:** Whenever feasible, antibiotic therapy should be guided by culture and sensitivity testing.
2. Begin **empirical treatment** only when strongly indicated and review within 48–72 hours once laboratory results become available.
3. **Education and Accountability:** Continuous medical education on AWaRe categories should be mandatory, emphasizing the difference between "Access" and "Watch" choices.[8]
4. **Restriction Policies:** Hospitals should implement formulary restrictions for Watch and Reserve antibiotics—ensuring their use only under infectious-disease or microbiology consultation.
5. **Public Awareness:** Community education about the dangers of self-medication and incomplete antibiotic courses can reduce unnecessary demand.

In Bangladesh and other South-Asian nations, where antibiotics are often sold without prescription, these principles are urgently needed. Public-private collaboration could establish stewardship units within tertiary hospitals, supported by national surveillance networks and microbiology labs.

Global Responsibility and Future Directions

The fight against AMR requires global solidarity. Developed countries must support LMICs with funding, training, and laboratory infrastructure. Pharmaceutical industries should be incentivized to develop new molecules along with governments regulation regarding antibiotic marketing.

Innovations such as rapid diagnostic testing, AI-based surveillance, and phage therapy could aid in detecting and treating resistant infections. However, none of these will succeed without behavioral change among clinicians and patients alike.

Conclusion

The rising resistance among Watch group antibiotics represents a critical warning. This crisis transcends borders—it affects every clinician, pharmacist, policymaker, and patient. The solution lies not only in new drugs but in responsible use of the available antibiotics. Clinicians should prescribe wisely, support stewardship programs, and educate our communities. If we fail to act, infections that are easily treatable today may once again become deadly tomorrow.

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