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Pitfalls in AWaRe-based evaluation of antimicrobial use by prescription duration: An analysis using a National Database in Japan

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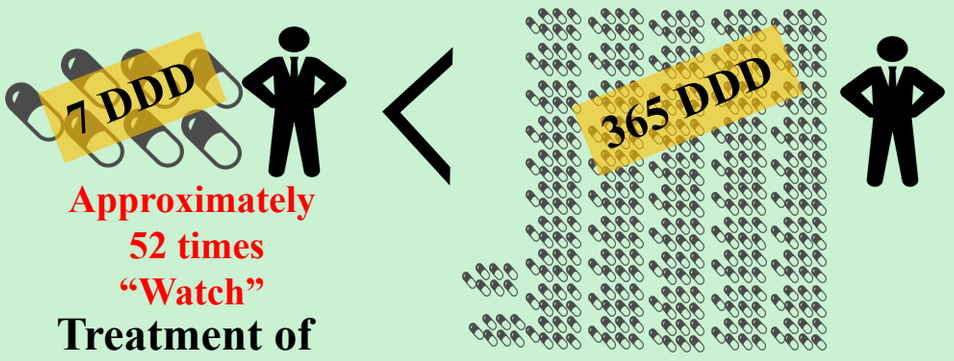
Background

AWaRe classification

Access	Watch	Reserve
low risk	Higher risk	Last-resort
penicillin, ST, etc.	quinolones, macrolides, etc.	cefiderocol, faropenem, etc.

- ✓ The WHO's AWaRe classification for promoting appropriate antimicrobial use (Access / Watch / Reserve)
- ✓ WHO target: ≥60% Access antibiotics
- ✓ However, evaluation by AWaRe does not consider clinical context or treatment duration.
- ✓ For example, the use of clarithromycin for NTM treatment is appropriate, but it is prolonged and increases the use of the Watch.



Approximately 52 times "Watch"

Treatment of common infections (7 days assumed)

NTM standard treatment (at least 1 year assumed)

Purpose

- ✓ This study examined the pitfall of long-term prescriptions in AWaRe-based evaluation.

Methods

- ✓ Data source: Based on National Database, which covers all insured medical services in Japan's universal health system.
- ✓ Study period: 2019
- ✓ Focus: Oral antimicrobials in outpatients
- ✓ Analysis:
  - -AMU measured as DID by prescription duration (<14 vs ≥14 days)
  - -Data analyzed by substance (ATC5)

Abbreviations: AMU, Antimicrobial use; DID, defined daily doses per 1,000 inhabitants per day; NDB, National Database of Health Insurance Claims;LT-prescriptions, long-term prescriptions; NTM, Nontuberculous Mycobacteria disease

Results

Figure1. Antimicrobial use by prescription duration

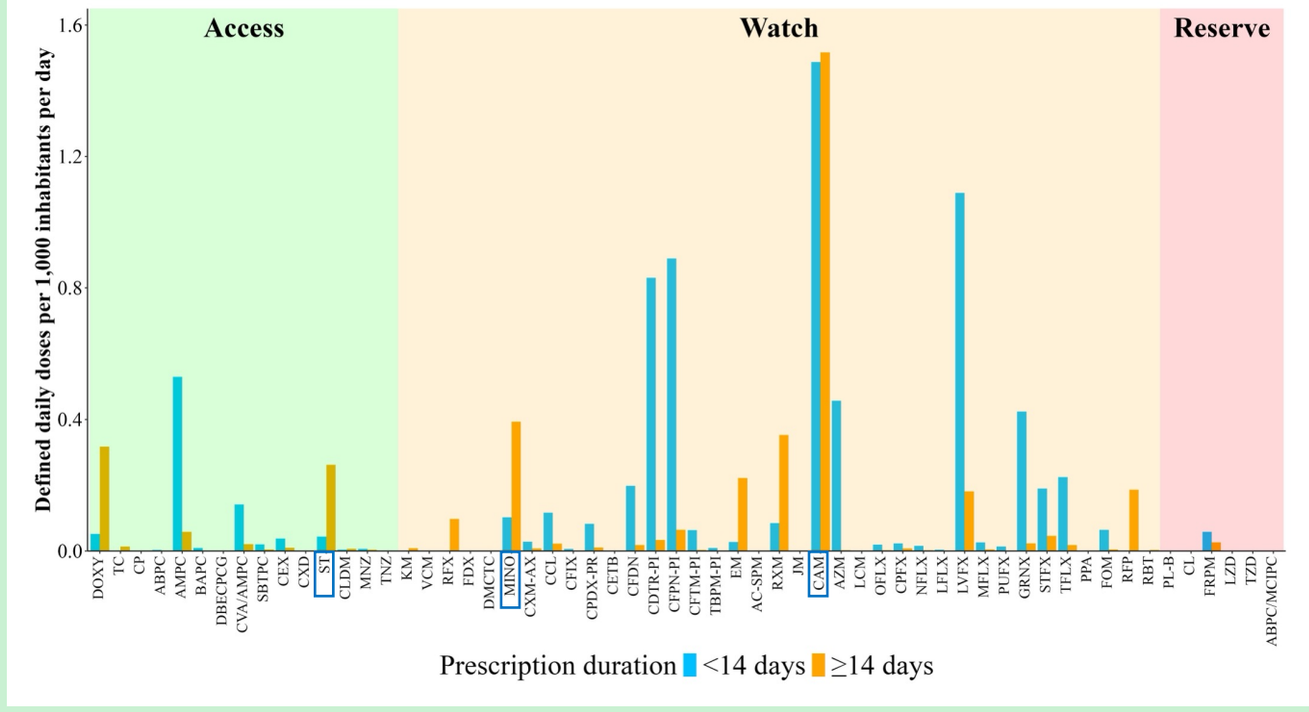
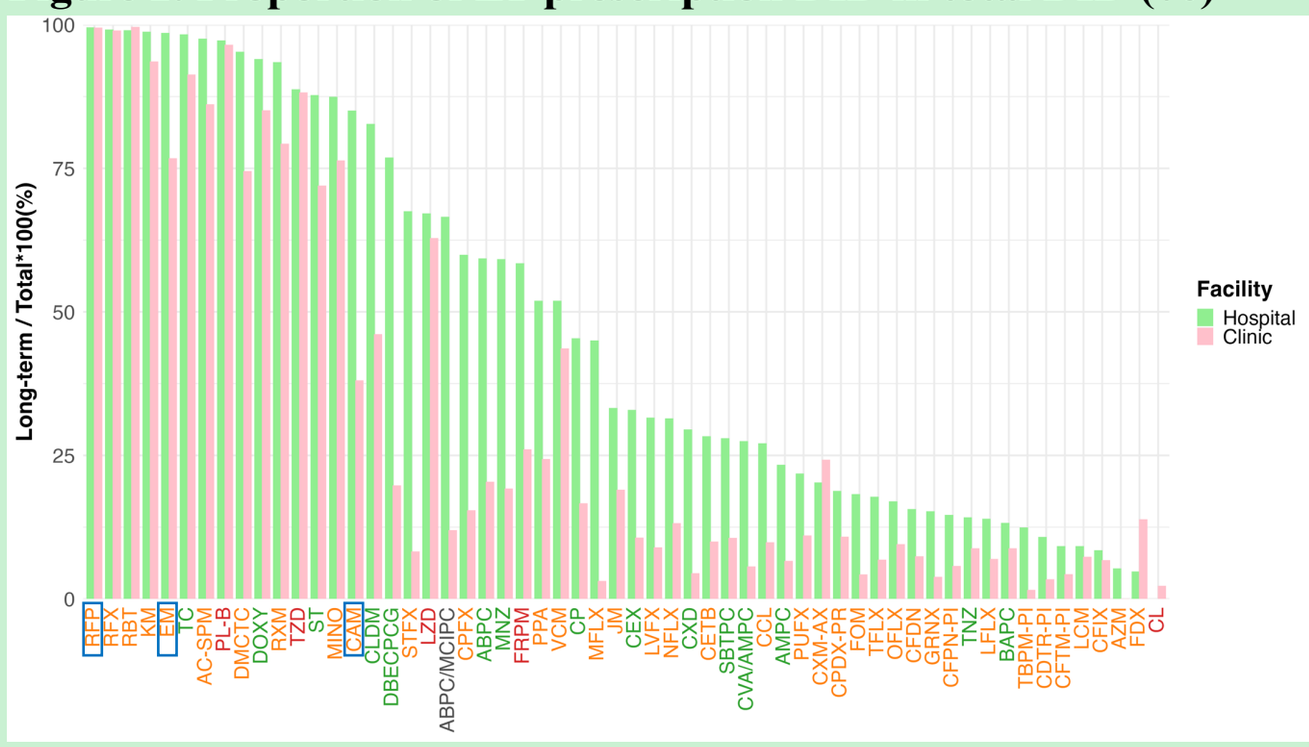


Figure 2. Proportion of LT-prescription DID in total DID (%)



- ✓ Total AMU was 11.17 DID (short-term: 7.39, long-term: **3.77**:**34%**).
- ✓ LT prescriptions were frequent for clarithromycin, for minocycline and for ST (**1.5**, **0.4** and **0.3** DID, accounting **50.5**, **85.7** and **79.3%** of the total). [Figure. 1]
- ✓ Thirty percent of the antimicrobials were prescribed as LT for over 70% of their use. [Figure. 2]
- ✓ Hospitals: many long-term prescriptions for "Watch" (erythromycin, rifampicin, clarithromycin).

Conclusion

- ✓ These findings suggest that **LT-prescriptions** are a major **pitfall in AWaRe-based** assessment.
- ✓ **LT** prescriptions accounted for approximately **30% of the total**, including **appropriate treatments**.
- ✓ "**Watch**" use **increases**, hindering achievement of the Access target (13.9% in Japan)
- ✓ **AMU** should be carefully **evaluated** considering **diseases** and **treatment duration**, not only by AWaRe.

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