Repeated Point Prevalence Survey of inpatient Antimicrobial use in Sanandaj hospitals, Iran. An Implication for Antibiotic Stewardship.

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PURPOSE / OBJECTIVES

The high rate of antimicrobial resistance due to overuse of antimicrobials in Iran is a significant concern.(1) We quantified prescribing patterns of antimicrobials in paediatric and neonatal wards of two referral centers, the Besat teaching hospital and the Social Security hospital in Sanandaj, Iran.

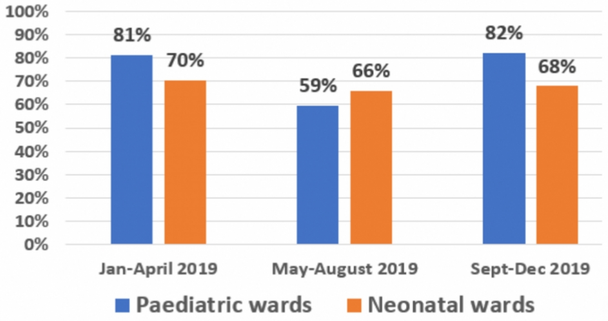
MATERIAL & METHODS

Three Global Point Prevalence Surveys (www.global-pps.com) were consecutively performed in January-April, May-August, and September-December 2019. All children and neonates present in the wards at 8 a.m. were included. Detailed data for those on antimicrobials (ATC code J01) covered antimicrobial prescribing patterns, quality indicators, biomarker (CRP/PCT), and resistance data. antimicrobial prescriptions were further classified as 'Access,' 'Watch,' 'Reserve' or 'Not recommended' using the 2019 WHO AWaRe classification list.

RESULTS

Out of in total 264 and 140 admitted patients in paediatric and neonatal wards in 2019, on average 75% children and 67% neonates received at least one antimicrobial. See ***Figure 1*** for mean rates by survey period. Top prescribed antimicrobials overall in paediatric wards were ceftriaxone (62.4%), vancomycin (12.2%) and ceftazidime (12.2%); and ampicillin (41.5%), cefotaxime (29.0%) and gentamicin (12.0%) in neonatal wards (***Figure 2***).

Fig. 1: **Mean prevalence of AMU by survey period in 2019.**



The **parenteral administration** in paediatric and neonatal wards prevailed (97.9% and 100%), as did empiric prescribing with 100% and 99%.

Laboratory diagnostic capacity was largely absent. CRP was used in the decision to treat only one child and one neonate.

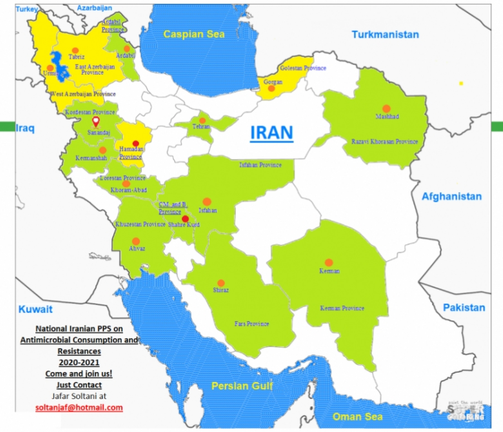


***Fig. 3*: Quality indicators for antimicrobial use by survey period in 2019**

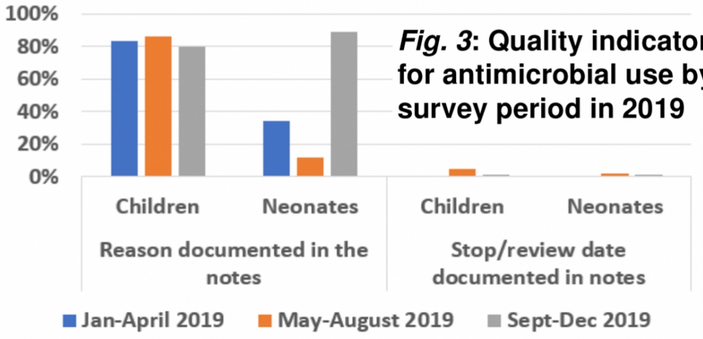


Fig 4: **antimicrobial use according to the AWaRe classification among neonates (top) and children (below)**

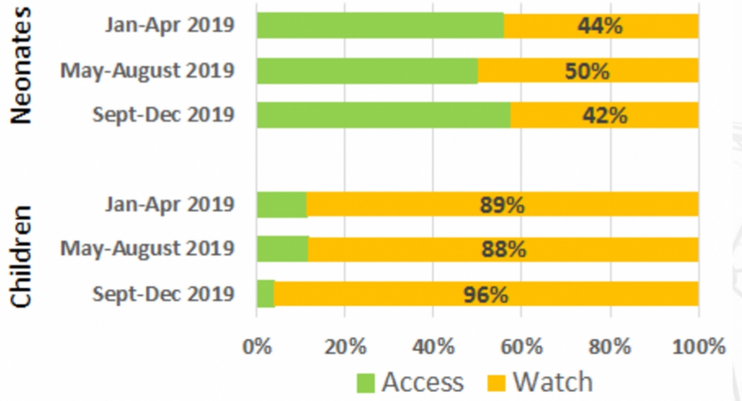
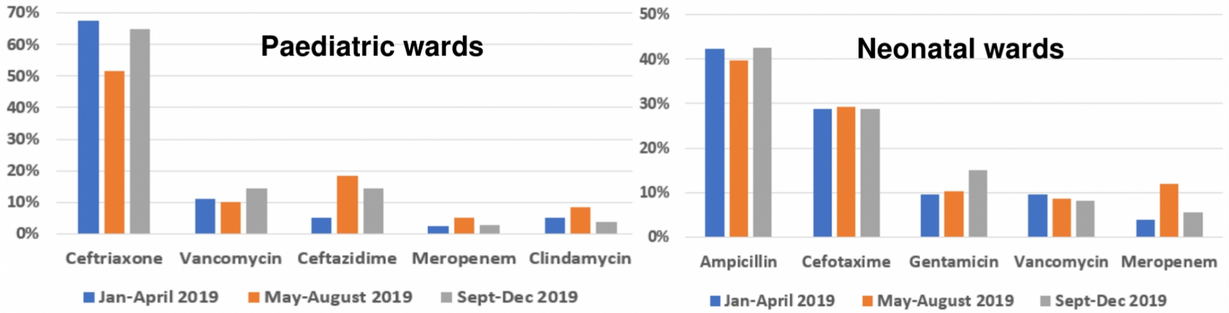


***Fig. 2*: Most prescribed antimicrobials (ATC J01)**



CONCLUSION / KEY MESSAGE

The high prevalence of antimicrobial prescribing, high empiric therapies, and poor outcomes for antimicrobial quality indicators should initiate antimicrobial stewardship interventions with defined targets to improve antimicrobial prescribing in our hospitals (for example introduce a system to enforce writing down a stop or review date for the prescribed antimicrobial), along with enhanced laboratory diagnostic capacity.

REFERENCES

1. Jafar Soltani[1], Gholamreza Pouladfar[2], Ann Versporten[3] et al.; Point Prevalence Survey of Antimicrobial Prescription and Infection in Pediatric and Neonatal Wards of Two Iranian Teaching Hospitals. Erciyes Med J. 2019; 41(1): 25-32

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