Azithromycin for everyone – an audit of azithromycin use within the Emergency Department

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Background

Azithromycin is a broad-spectrum macrolide antibiotic with bacteriostatic activity against many Gram-positive and Gram-negative bacteria including Bordetella pertussis and Legionella species. It also has activity against Mycoplasma pneumoniae, Chlamydia species and Mycobacterium avium complex. Azithromycin is primarily used for the treatment of respiratory, enteric and genitourinary infections, most notably gonorrhoea.

Neisseria gonorrhoeae is an urgent public health priority globally and azithromycin is an integral part in all treatment combinations.1,2 Resistance rates are increasing around the world and in 2018, for the first time ever, two extensively drug-resistant N. gonorrhoeae infections were reported in Australia (CARAlert, the National Alert System for Critical Antimicrobial Resistances).3

As part of the Antimicrobial Stewardship (AMS) program at Logan Hospital, restrictions have been placed on the use of Intravenous (IV) azithromycin which are:
- Severe Community Acquired Pneumonia (SMART-COP >5)
- Severe Pelvic Inflammatory Disease (PID)

In support of these restrictions, access to IV azithromycin was limited to pharmacists’ supply, to the Intensive Care Unit imprest and the After-Hours Cupboard for access by staff out of pharmacy business hours.4,5,6

Aim

To assess adherence to IV azithromycin AMS restrictions in the emergency department (ED) after addition to imprest in an automated and controlled medication system.

Methods

• Two retrospective Drug Usage Evaluations were conducted of IV azithromycin use within ED.
• The first was a baseline audit of the twelve-month period prior to the introduction of the drug to ED. The patients were identified using after-hours imprest logs and dispensing records. IV azithromycin supplied by pharmacists were excluded as meeting AMS restrictions was a condition of supply.
• IV azithromycin was then added to the automated and controlled medication system in the resuscitation area of the ED. Automatic pop-ups were programmed into the system reminding staff of the AMS restrictions with regards to IV azithromycin every time it was removed from the system. Staff were required to acknowledge the restriction by accepting the screen prior to removing the medication. This signified their acceptance of its use within AMS restrictions.
• Six months after its addition to imprest a post-implementation audit was conducted. Patients identified through the automated medication system.
• ED notes, medication cards and progress notes were reviewed via the Electronic Clinical Record Management System to assess compliance of prescribing with AMS restrictions.

Results

Adherence with AMS restrictions on IV azithromycin prescribing fell from 50% at baseline to 34% in the post-implementation period. The majority of use was for mild or moderate community acquired pneumonia (SMART-COP<5), exacerbation of chronic obstructive pulmonary disease, or PID. Data showed less than half of the indications entered in the system matched the final diagnosis. Overall use also increased markedly, from an average of 5 vials per month to 22 vials per month. These results can be interpreted as increasing the access to a restricted antibiotic led to decreased pharmacist intervention and in turn a significant increase in inappropriate prescribing. After the trial IV azithromycin was removed from the ED.

Conclusion

Allowing greater access to IV azithromycin in ED with reduced direct pharmacist input at point of prescribing led to an increase in overall usage and prescribing non-adherent with AMS restrictions. Prompts built into the computerised imprest system were ineffective as a method of ensuring compliance and reflect the importance of pharmacist input, knowledge and skills at the point of prescribing. This is paramount even when computerised systems are present.

References

2. Worobetzki KA, Bilan GA. Sexually Transmitted Diseases Treatment Guidelines. Centers for Disease Control and Prevention MMWR Recomm Rep 2015;64(3)