

The Potential Effect of Intensive Clinical Infection Review on Meropenem Prescriptions

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INTRODUCTION

Heartlands Hospital is a busy, urban UK hospital with around 800 beds. Antimicrobial stewardship (AMS) is a key priority for our hospital and we are keen to embed good practice and awareness of antimicrobial resistance into our day to day clinical practice in-line with the national AMR CQUIN 2016/2017 and 2017/2019. Our AMS strategy is unique in that we have an in-house electronic AMS dashboard. There has been a clear focus on reducing unnecessary carbapenem usage.

Clinical infection specialists - both microbiology and infectious diseases teams - will often claim to offer more effective antibiotic management advice after a bedside clinical assessment rather than by clinical advice given remotely by telephone.

METHODS

We attempted to quantify the effect of a systematic, early clinical review on all patients started on IV meropenem. We compared our effect with recent historical prescribing data obtained prospectively during an observation period and also the particular effect on patients for whom our service has already recommended meropenem, largely by telephone. We excluded critical care, haematology and oncology wards where there is more intensive daily infection ward rounds and these wards are not part of our electronic prescribing system.

An AMS dashboard produces near real-time details of broad spectrum antibiotic prescribing. During the study period an infection specialist (NJ/EM) conducted clinical bedside reviews of patients prescribed meropenem. The reason for meropenem prescription and whether the decision to prescribe had been previously discussed with the infection teams was recorded.

RESULTS

During the six week investigational period there were 48 patients prescribed meropenem. The commonest reason for this choice was penicillin allergy (33 patients) followed by perceived failure of other broad spectrum antibiotics (11 patients).

Our clinical review within 24 hours resulted in a de-escalation or cessation in 32 of 48 patients.

Of these 48 prescriptions, 19 were recommended by an infection specialist - largely by telephone. In no case was it predicted that a clinical review might alter the antibiotic management.

Of these 19 telephone decisions, 12 were stopped or deescalated following a clinical review.

In the 33 patients with stated penicillin allergy, 9 tolerated beta-lactam antibiotics following a risk assessment as part of their clinical review and 9 had all antibiotics stopped.

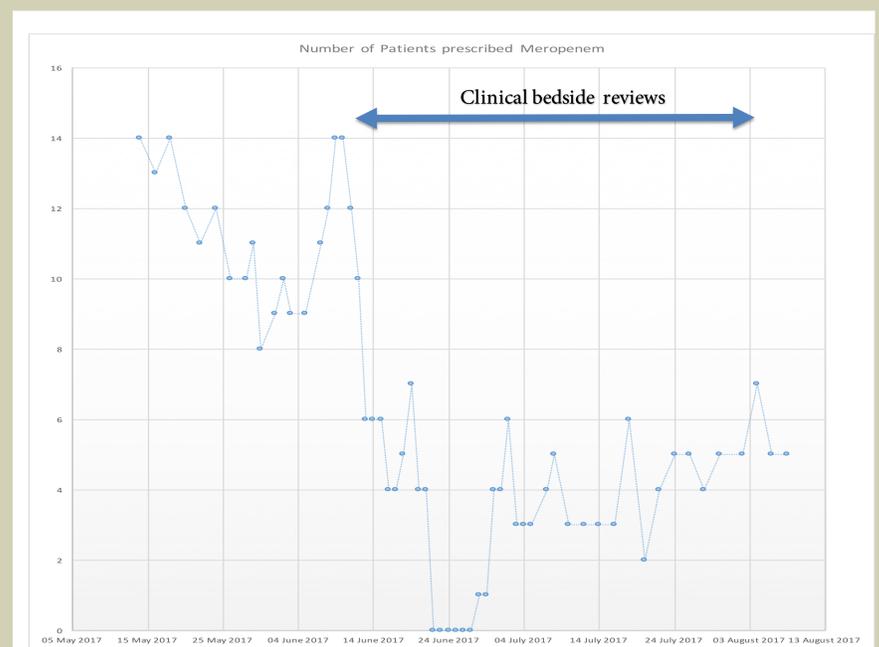


Figure. Number of patients prescribed meropenem each day across the three month period. The six week intervention period is indicated.

DISCUSSIONS

In an era of increasing antimicrobial resistance and as part of a National AMR CQIN there is a national drive to reduce the use of broad spectrum antibiotics.

At Heart of England NHS Trust antimicrobial stewardship process have reduced carbapenem usage to relatively low levels.

Our study suggests that a process of early, systematic clinical review can reduce meropenem prescriptions to a third of this level.

We found a similar dramatic reduction was also possible when clinical reviews were undertaken in patients who were receiving meropenem as a result of a telephone consultation with an infection specialist.

CONCLUSIONS

Clinical reviews of patients can dramatically reduce prescribing of meropenem.

This effect is seen to a similar degree in patients for whom antibiotic advice has already been given by telephone.

Routine bedside clinical reviews of patients on broad spectrum antibiotics should be part of a portfolio of AMS interventions in all NHS hospitals.