

Managing a *Pneumocystis jirovecii* pneumonia outbreak in a renal transplant population: Challenges and opportunities

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Introduction

There are reports in the literature of outbreaks of pneumocystis jirovecii pneumonia (PCP/PJP) in renal transplant populations. Nevertheless, guidance and experience in managing such outbreaks remains limited. Here, we will highlight how we dealt with a recent PCP/PJP outbreak to minimise transmission between patients as well as the challenges and lessons learnt.

Methods

Once the PCP/PJP outbreak was declared, the transplant lead contacted other units in which there were a PCP/PJP outbreak to draw from their experiences, as well as conducting an extensive literature review and identifying any relevant guidelines.

The following actions were instigated:

- Regular meetings between microbiology team, infection prevention nurses, infectious diseases consultants, out-patient co-ordinators, representatives from estates, renal consultants, public health, CCGs and transplant nurses.
- Re-establishing PCP/PJP prophylaxis, with appropriate blood test monitoring, for all 420 renal transplant patients
- We used co-trimoxazole as first line (480mg od for patients at low risk of complications and 480mg od if high risk), atovaquone as second line and dapsone as third line.
- CCGs agreed to support co-trimoxazole prescribing and monitoring in patients at low risk of complications
- Patients were offered face masks when attending clinics.
- Patients were given the opportunity to have a telephone consultation instead of attending clinic.
- Microbiology team processed samples more quickly, and we started using Beta-D-Glucan as a screening test.

Results

Over 50 hours of consultant time was spent managing the outbreak including screening all patients records to determine the prophylaxis regime. Secretarial staff and health care assistants co-ordinated sending letters to patients and GPs. The nurses maintained a database of blood test dates and co-ordinated reviewing results in accordance with consultant agreed parameters.

The average number of daily phone calls from transplant patients to the transplant nurses increased from an average of 10 phone calls to 30 phone calls per day.

24 patients contacted the transplant team to report symptoms of shortness of breath, dry cough and sore throat within a few days of the outbreak being declared of which only 1 patient was found to be positive for PCP/PJP.

No patient who had been started on prophylaxis went on to develop PCP/PJP. There were no further mortalities in cases presenting after the outbreak was declared. Patients were advised to remain on prophylaxis until 3 months after the last case was diagnosed.

As the literature is unclear on optimal co-trimoxazole dose we had used the two-tiered approach. However there were significant side effects, blood test changes and need for dose adjustments (data being analysed). During the outbreak we spent over £30,000 on atovaquone.

Conclusion

If we have a future outbreak we plan to use a prophylactic dose of co-trimoxazole 480mg alternate days in all patients to minimise morbidity and to use of a different second line agent.

Co-ordinating care during this outbreak involved all members on the multi-professional MDT both in secondary and primary care. Staff in all areas went above and beyond and often worked considerably over their normal hours to keep patients safe.