Introduction

An MDT approach is said to be essential by many authors when diagnosing and treating patients with PJIs in order to give the best outcomes (Cheng et al. 2018, Colston 2018, Osman 2013).

At the Royal Orthopaedic Hospital in Birmingham, our BI MDT is comprised of an Infectious Diseases (ID) Consultant, Orthopaedic surgeon, Consultant Rheumatologist, Preventive Medicine and Public Health Officer, and a Co-ordinator (please see diagram below for specific MDT roles). Our MDT meets weekly to discuss local trust and regional referrals. Discussion includes surgical options, sampling advice, antibiotic advice (including post operative and microbiology), histology results, antibiotic duration, monitoring and follow up.

Infectious Disease Consultant
- Provides expert guidance on antimicrobial management of infection
- Chairs of MDT Meeting

Orthopaedic Surgeon
- Competent in revision surgery
- Experienced in available surgical options
- Referring surgeon or named representative to outline clinical history

Bone Infection Service MDT discussion

Antimicrobial Pharmacist
- Support on clinical antimicrobial management, ensuring safe prescribing along side patients’ other medication and health conditions

Co-ordinator
- Preparing and distributing the weekly MDT agenda
- Obtaining patient scans / x-rays / notes
- Documenting and communicating outcomes
- Communication with GPs
- Arranging BI OPA’s

Microbiologist
- Provides expert guidance on antimicrobial management of infection
- Provides update on microbiology results

Patient Management

Prompt identification and correct management of PJI is vital (Cheng et al. 2018). Diagnosis is based on a combination of clinical symptoms, microbiological results and operative findings (Parviz et al. 2018). At the ROH it is advised that all patients with suspected or confirmed PJI are discussed as early as possible in treatment at our BI MDT to guide surgical and antibiotic management. Patient pathways are based on evidence-based research in identification of PJI (Parviz et al. 2018) and expert consensus on Orthopaedic Infections (Argenson et al. 2018).

When treating a patient with PJI the timing and type of intervention has been shown to be an important factor in surgical success. For example, a Debridement, Antibiotic and Implant Retention (DAIR) procedure has a greater chance of working if it is done as soon as possible after initial PJI symptoms become apparent. Studies have shown that if DAIR is performed less than one week after initial symptoms the rates of success are much higher (Argenson et al. 2018). At the ROH the IPC / Tissue Viability team manage a ‘Wound Care Helpdesk’. Patients are given this number on discharge and advised to call if they develop any signs of infection. These patients can then be brought back for an urgent review the same or following day for assessment by a senior surgeon who then refers to the BI for advice. The earlier the infection is treated, the greater the chance of success, reducing likely hood of further hospital admissions and more surgery.

Decisions made around antibiotics by the BI are crucial in the management and treatment of PJIs. Pre-operatively patients should ideally have stopped any antibiotics 2 weeks prior to surgery (following careful risk assessment). This will increase likelihood of identifying an organism from samples that are taken (Osim 2013). Post-operatively once samples have taken the patient will then be commenced on antibiotics as per ROH antimicrobial guidelines. Microbiological results are monitored and management altered accordingly. We adhering to local guidelines by highlighting to surgical team if no gram negative growth and monomicrobial can be stopped. Once results are finalised and sensitivities known antibiotic treatment plan can be decided. Treatment length can vary from 6-12 weeks dependent on each individual case (Cheng et al. 2018). Each antibiotic will require specific monitoring and success of treatment is observed through blood results, symptoms and wound progress. Any concerns throughout treatment are fed back to ID consultant and Orthopaedic consultant to review and make changes if required.

The Future of the BIS at the ROH

- Discussions with local CCG to gain funding to extent service to provide regional advice
- Standardised patient feedback form to more clearly display our service outcomes
- Further research to look at hospital specific outcomes for PJI treatment

No conflicts of interest to declare

References