

P2288

Abstract (poster session)

Recurrences of Clostridium difficile infections in Stockholm-relapse or re-infection?

R. Rezaei, Y. Chen, M.U. Rashid*, C.E. Nord, A. Weintraub (Huddinge, SE)

Objectives: Clostridium difficile is a Gram-positive, spore-forming anaerobic rod which cause a wide range of diseases in humans, from mild diarrhea to severe life-threatening pseudomembranous colitis. Approximately 20% of the patients treated for a first episode of C. difficile infection (CDI) suffer from a recurrent CDI within 8 to 10 weeks. A recurrence can correspond to a relapse, i.e. infection with the same strain, or a re-infection, i.e. infection with a different strain. The purpose of the study was to evaluate if a recurrence of CDI is a relapse or a re-infection. **Methods:** A total of 149 toxigenic C. difficile strains collected between 2008 and 2011 from 67 patients were analysed by PCR-ribotyping. All patients had at least one C. difficile positive sample at a minimum of 8 weeks after the first sample indicating a recurrent CDI. The isolates were identified by characteristic colony morphology, typical smell and Gram staining. PCR ribotyping was used to analyse the isolated strains. The PCR products were separated on 5% polyacrylamide gels by electrophoresis. The gels were scanned and analysed by Bionumerics software version 6.5. The banding patterns were compared to a database including C. difficile reference strains. **Results:** Fiftyfive (82%) patients had one episode of recurrence. In 32 (58%) of the patients, the isolate from the recurrent CDI was of the same ribotype as the one isolated from the primary infection, indicating a relapse. In 23 (42%) of the patients the recurrent CDI was due to a different ribotype, indicating a re-infection. Twelve of the patients suffered from more than one recurrent CDI. Four were due to relapse and 8 were due to both relapse and re-infection. A total of 43 different ribotypes were identified. The dominating ribotypes were 020 (56%), 001(33%), SE21(23%), 023(23%), 231(19%). No 027 ribotypes were found. **Conclusion:** A recurrence of CDI could be due to the same or due to a different C. difficile strain. Here it is shown that 58% of the patients, the recurrent CDI was due to relapse and in 42% due to a re-infection. In addition, 8 of 12 patients with more than one recurrent CDI, both relapse and re-infection were present.