Abstract (poster session)

First report from EUropean, multi-centre, prospective bi-annual point prevalence study of CLostridium difficile Infection in hospitalised patients with Diarrhoea (EUCLID)


Objectives: To measure the extent of under-testing and under-detection of C. difficile infection (CDI) across Europe.

Methods: Participating hospitals (PHs) were recruited based on country population (1 PH per 1 million people). Data were collected from PHs on methods of CDI laboratory diagnosis, criteria for testing and reporting, local rates of testing and CDI positive case rates via an initial study questionnaire. All diarrhoeal in-patient faecal samples (regardless of tests requested) submitted to the PHs on one day (during either Dec 2012 or Jan 2013) were sent to the EUCLID National Coordinating laboratory (NCL) for each country. Samples were tested for CDI at NCLs using an optimised 2-stage CDI algorithm: membrane enzyme immunoassay (EIA) for glutamate dehydrogenase (GDH)/membrane EIA for toxins A & B (C.DIFF QUIK CHEK COMPLETE®, Techlab, USA). Results at the PH and the NCL were compared for each sample.

Results: 482 PHs from 20 European countries participated in the study; 3923 faecal samples were submitted to NCLs (mean 8.2, range 5.3-13.5 per hospital), with a mean positivity rate of 8.8% (Country range (CR) 0-19.7%). CDI diagnostics were performed at 469/482 (97.3%) of the PHs, but only 11% tested all diarrhoeal faecal in-patient samples and only 14.5% used an optimised CDI algorithm for routine testing, although 43.4% used combinations of assays that could detect C. difficile toxins in faecal samples. The mean number of CDI tests/10,000 patient bed days (PBDs) reported by PHs was 61.9 (CR 4.6-132.5); the mean number of positive CDI cases/10,000 PBDs was 7.0 (CR 0.8-16.2). The potential under-diagnosis rate (no test performed at PH on sample found positive at NCL) was 24.6% (CR 0-100%); in total on a single day 82 patients across Europe with CDI were not diagnosed due to lack of clinical suspicion. 47 patients found to be positive for CDI at NCLs were tested at PH but received an incorrect negative result (2.3%, CR 0-5.9%). There were 246 patients on a single day across Europe (6.3%, CR 0-23.0%) that received an incorrect result (false positive, false negative or not tested at PH but positive at NCL).

Conclusions: Under-testing (not testing all samples) and under-detection (inadequate laboratory diagnostics) likely account for a large disparity between reported and actual rates of CDI across Europe. Potentially wrong diagnoses in up to 23% of patients may lead to inappropriate or inadequate treatment of patients and inadequate infection control measures.

Figure 1. The outcome of samples from each country.