

P0255 Fidaxomicin, unlike conventional treatment options, reduces *Clostridium difficile* environmental contamination during and at the end of therapy

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Background: Clinical and *in vitro* studies have shown lower *C. difficile* (CD) spore counts in the faeces of CD infection (CDI) patients treated with fidaxomicin (FDX) vs vancomycin (VAN). We aimed to determine if contamination of the environment surrounding CDI patients is lower in FDX compared with VAN/metronidazole (MET) recipients.

Materials/methods: CDI cases were recruited at 4 UK hospitals (Leeds, Bradford, Londonx2). Environmental swabs (5 room sites) were taken pre-treatment, and at 2-3, 4-5, 6-8 and 9-12 days post-treatment initiation, end of treatment (EOT), and post-EOT. Faecal samples were collected at diagnosis and as often as produced thereafter. Swabs and faeces were cultured for CD; percentage CD positive samples, and total CD faecal counts, were compared between FDX and VAN/MET recipients at each time point.

Results: 244/253 recruited patients had pre-EOT environmental samples. There was a significant reduction in environmental contamination (one or more sites CD-positive) around FDX vs VAN/MET recipients at days 4-5 (30% vs 50% recipients, $p=0.04$), and at days 9-12 (22% vs 49%, $p=0.005$). This trend was consistently seen at all other time points, but was not statistically significant. Post-EOT ($n=76$ patients), environmental contamination persisted at similar rates, with no clear differences between treatment groups. When all samples from all 5 sites were included, there was also a significant reduction in environmental contamination around FDX vs VAN/MET recipients (day 2-3, 21% vs 29% sites, $p=0.04$; day 6-8, 14% vs 22%, $p=0.008$; day 9-12, 10% vs 21%, $p=0.0008$). Faecal positivity significantly declined on any treatment: OR=0.36 per day (95% CI 0.14-0.91) $p=0.03$, and generally increased post-EOT. FDX-associated faecal positivity rates were lower than those for VAN/MET from days 4-5 of treatment (including post-EOT), but were only significant at days 9-12 (15% vs 55%, $p=0.03$). Faecal FDX-associated colony counts were consistently lower than those for VAN/MET post-EOT (not significant).

Conclusions: There were significant reductions in the recovery of CD from both faeces and the environment around FDX vs VAN/MET recipients. Use of FDX may therefore lower the risk of CD transmission by reducing the risk of excretion and environmental contamination

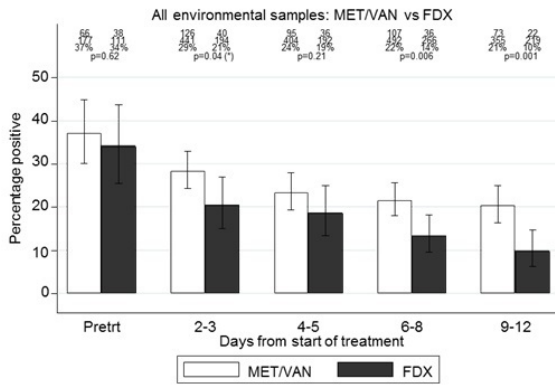


Figure 1. Percentage *C. difficile* positive environmental samples from all sites for Fidaxomicin vs Metronidazole/Vancomycin treated patients. Positive and total sample numbers within each time period and p value for each comparison are shown at the top of the graph.

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