

P2645 Effect of increased hand hygiene and rectal screening for vancomycin-resistant enterococci (VRE) on day 0 on VRE infection rates during intensive care unit admission in a developing country tertiary care educational university hospital

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Background: In this quasi-experimental before and after study, we aimed to evaluate the efficacy of VRE rectal screening on nosocomial VRE infection rates in three 3rd level intensive care units (ICU) of a tertiary-care educational hospital in a developing country.

Materials/methods: This study was performed at three 3rd level ICUs (Anaesthesiology and Reanimation, Chest Diseases, Neurology) of our setting (total active 55 beds). After the 1st July 2015, patients admitting to the three mentioned ICUs, were screened for rectal colonization by rectal swabs on day 0 in the ICU. Preintervention period was July 2012-June 2015 while intervention period was June 2015-June 2018. The nosocomial infection surveillance was performed via active prospective surveillance by using CDC criteria (accepted before 2013). Rectal swabs were cultured onto chromID VRE agar plates (biomerieux, France) and incubated at 35°C for 24 hours. Suspected colonies on chrom ID VRE were identified to species level by the VITEK MS (biomerieux, France). Antimicrobial susceptibility testing of the isolates were performed by the VITEK 2 system (biomerieux, France). Isolates resistant to glycopeptides were further confirmed as vancomycin resistant by a MIC method before reporting as VRE by the E-test (biomerieux, France) and interpreted according to the EUCAST criteria. Chi square test was used for statistical analysis and a p value of 0.05 was considered to be significant. We compared the hand hygiene data (that we started to collect according to WHO-5 criteria via direct observation in January 2014) related to January 2014-June 2015 vs July 2015 vs June 2018.

Results: Incidence density of any kind of nosocomial VRE infection decreased approximately 83.9% [0.826 per 1000 patient days (40/48416 patient days, 40/3910 cases) vs 0.133 per 1000 patient days (6/44906 patient days, 6/3388 cases), p = 0.0001]. VRE rates in any nosocomial infection type in preintervention and intervention periods were 19.3% (40/207) vs 4.4% (6/135), respectively (p:0.0007). Overall hand hygiene compliance rates in January 2014-June 2015 vs July 2015 vs June 2018 were 36,7% (1510/4106) vs 58,4% (4457/7629) (p<0.0001).

Period	201 2/3	201 2/4	201 3/1	201 3/2	201 3/3	201 3/4	201 4/1	201 4/2	201 4/3	201 4/4	201 5/1	201 5/2	201 5/3	201 5/4	201 6/1	201 6/2	201 6/3	201 6/4	201 7/1	201 7/2	201 7/3	201 7/4	201 8/1	201 8/2
Overall Enterococcal infection incidence	4,01	5,8	4,75	2,87	6,05	4,88	4,8	4,02	5,45	3,14	3,19	5	5,54	3,81	2,02	1,75	2,89	3,8	4,61	2,91	3,06	1,39	3,2	1,57
Overall VRE infection incidence	0,86	0,24	1,58	0,95	0	1,54	0,43	0,89	0,47	0,24	0,73	0,95	0,42	0,22	0	0	0	0	0,24	0,24	0	0,46	0	0
Hand hygiene compliance rate							16,9	17,4	24,5	53,6	59,6	63,5	53,7	55,6	56,1	54,7	52,2	55	56,2	54,5	52,8	65,8	68,4	67,3

Conclusions: VRE screening upon ICU admission and increased hand hygiene seem to be efficient in our developing country setting.

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