

MEETING ABSTRACTS

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ORAL PRESENTATIONS

O1

O001: Getting the unexpected: no association between hand hygiene and workload

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Introduction: A high compliance with hand hygiene is a cornerstone of any infection control program. However, a high workload and a lack of time are most commonly used arguments against an appropriate compliance.

Objectives: In order to assess the relationship between the hand hygiene events (HHE) and the workload, we correlated HHEs per patient-day (PD) with the staff time/PD (h), the nursing effort/PD (h) and the C-value indexing the workload, respectively.

Methods: All HHEs at a hematology ward (University Hospital Basel, Switzerland) were continuously recorded from 01.03.12 to 28.02.13 using the Ingo-man Weco (Ophardt Hygienetechnik, Issum; Germany) and could be analyzed dispenser-, day-, shift-, localization-specifically. Daily data on patients, staff time (h), nursing effort (h), C-value ($1 - (\text{nursing effort} / \text{weighted staff time}) * 100$) were calculated with regard to the workday from the electronic patient documentation sheets. For statistics SPSS was used.

Results: During the one year investigation 208.184 HHE translating into 57 (± 10) HHE/PD were performed. HHE from Monday to Friday exceeded HHE during the weekends with 59 (± 10) versus 51 (± 9) /PD. HHE/PD were significantly associated with the staff time with $r=0.37$ ($p=0.01$) and with the nursing effort with $r=0.41$ ($p=0.01$), respectively. These associations could be verified during workdays as well as during the weekends. In contrary, HHE/PD did not depend on workload in general indexed by the C-value with $r=-0.04$. However, during Monday and Friday HHE/PD seemed to correlate even inversely with the C-value ($r=0.20$; $p=0.01$).

Conclusion: HHE/PD were associated with the staff time and the nursing effort indicating a constant compliance regardless the workload. This hypothesis was confirmed by the lack of a positive association between the C-value and the HHE/PD. Thus compliance seemed not to be affected by workload at the hematology ward enrolled in this investigation.

Disclosure of interest: None declared.

O2

O002: Patient and healthcare worker perception about patient participation in improving hand hygiene practices: impact of a patient participation intervention

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Introduction: We implemented a cluster-randomized study at a 2200-bed academic medical centre to assess the impact of novel strategies to promote hand hygiene (HH). Wards in one of the three study arms were exposed to a patient participation (PP) program.

Objectives: To investigate the impact of a formal PP program on healthcare worker (HCW) and patient perception of PP for improving HH compliance.

Methods: We performed two cross-sectional studies with written, self-administered, anonymous questionnaires: one each for patients and HCWs. Adult patients were eligible if hospitalized for more than 24 hours in one or more of 66 study wards and discharged between May 16 and May 31, 2012 to their usual place of residence. Patients were defined as "exposed" (to PP) if they stayed ≥ 24 hours in \geq one ward in the PP study arm during their admission. Completed surveys were returned via postal mail. HCWs working in all study wards were eligible. HCWs were defined as "exposed" if they currently worked in a PP ward. Surveys were brought to each study ward by a member of the study team and completed surveys were returned via internal mail. For each survey, non-respondents received reminders 2 and 4 weeks after initial distribution.

Results: The response rate was similar among exposed and non-exposed patients: 167/316 (53%) and 378/686 (55%), respectively. Compared with non-exposed patients, exposed patients were no more likely to agree that "patients should remind healthcare workers to perform hand hygiene" (31% vs 26%, $p=.25$) or to report having reminded a nurse (5% vs 3%, $p=.16$) or a doctor (2% vs 5%, $p=.29$) during their last admission. The response rate was also similar among exposed and non-exposed HCWs: 230/531 (43%) and 436/999 (44%), respectively. The concept of patients reminding HCWs to perform HH was accepted by 67% of HCWs. HCW acceptance was independently associated with PP exposure (OR 1.51, CI95% 1.00-2.29, $p=.048$) and nursing profession (OR 1.69, CI95% 1.03-2.79, $p=.039$).

The resistance to methicillin was highlighted by the use of ceftiofur disks and oxacillin.

Results: Ninety-five (95) people participated in the study, 17 (18%) were MRSA positive. Carriage rates were distributed as follows: Traumatology 5/11, surgical center 6/25, visceral surgery 2/14, pediatric surgery 2/16, surgical ICU 3/29. The nurses of the first two services and doctors of visceral surgery were the most colonized with MRSA. MRSA isolates were resistant to aminoglycosides: kanamycin (88%), tobramycin (82%), Gentamicin (64%), quinolone: pefloxacin (70%). MRSA strains were more susceptible to macrolides and related drugs: Erythromycin (76%), Lincomycin (82%), pristinamycin (100%). No MRSA were resistant to vancomycin.

Conclusion: This study confirmed a high carriage rate of MRSA in the surgical staff of the Hospital Sylvanus Olympio and should encourage the development of appropriate preventive health measures such as the application of mupirocin in the context of fight against infections.

Disclosure of interest: None declared.

P194

P194: Preoperative screening of patients – a small step for the hospital, a big step for epidemiology

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Introduction: Preoperative screening, associated with adequate isolation measures of patients colonized with multidrug-resistant germs and implementation of effective hand hygiene measures – according to the model HUG Geneva- is a major goal of the activity in Hospital "Sf. Constantin", ensuring effective epidemiological control, adaptation of preoperative antibiotic prophylaxis, optimization of the medical act and, as final result, decreased risk of morbidity / mortality.

Objectives: Establishing the actual incidence of colonization with methicillin-resistant *Staphylococcus aureus* – MRSA and gram-negative bacteria producing Extended-Spectrum Beta-Lactamases/ESBL in a sample of population represented by hospitalized patients and monitoring the correct implementation of epidemiological isolation measures and hygiene of hospital staff and environment.

Methods: Observational and statistical study.

Results: from 01.01.2012 to 31.12.2012 MRSA and ESBL screening was conducted on a number of 2145 admitted patients (sample collection is done before hospitalization, with results available at the time of admission). The detected incidence of MRSA colonization is 10.29% and ESBL 7.8%, with no statistically significant differences between the various surgical or oncology specialties. The screening results overlapped the pre- or intraoperative bacteriological examinations in 27 % of cases. The existence of risk factors for colonization was detected in 54 % of cases. Knowing particular colonization allows initiation of appropriate containment measures in 94 % of cases and administration of adequate preoperative antibiotic prophylaxis to a percentage of 78% of patients operated. Self-control samples collected from the hospital personnel and hospital environment, monthly, have not revealed nosocomial germs. The nosocomial infection rate detected was 0.07%.

Conclusion: Along with the other measures implemented in the hospital on good medical practice and hand hygiene, preoperative screening is one of the chain links preventing occurrence of nosocomial infections.

Disclosure of interest: None declared.

P195

P195: Orthopedic surgical infections caused by rapidly growing mycobacteria: integrative review of literature

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Introduction: Infections due to rapidly growing mycobacteria (RGM) are strongly related to failures in the processes of cleaning, disinfection and sterilization of medical products.

Objectives: The objective of this study was to analyze the occurrence of surgical site infections by RGM in patients undergoing orthopedic procedures.

Methods: The method was the integrative review.

Results: The 21 articles reported 34 cases. The median time of diagnosis of SSI was 80 days, interquartile range 352 days and mode of 90 days. The most prevalent signs and symptoms reported by patients were: pain (61.8%), secretion (50.0%), edema (41.2%), fever (41.2%), erythema (26.5%), fistula (20.6%), heat (14.7%), tremor (5.9%), abscess (5.9%) and hematoma (3.0%). Regarding surgical interventions performed in patients after diagnosis of SSI, the most frequent was antibiotic therapy (100%), removal of the orthopedic prosthetic device (50.0%), drainage (41.2%), surgical debridement (41.2%), irrigation (23.5%), surgical revision (17.6%), replacement of prosthetic devices (8.8%), removal of the prosthetic components (8.8%), and reimplantation of the prosthesis (2.9%). The identification of etiological agent(s) of SSI did not follow a routine methodology, which could influence the reliability of the results, especially regarding the kind of etiologic agent. The isolated RGM of the infection sites were *M. fortuitum* (the most prevalent), *M. chelonae*, *M. abscessus*, *M. goodii*, *M. smegmatis*, *M. farciogenes* and *M. wolinskyi*. When the sensitivity test was performed, it was observed that the strains has approximately 80.0% of sensitivity to amikacin, claritromycin, ciprofloxacin. Suspicious sources were hydro massage tub used by a resident surgeon before operating; liquid components or cement powder of methylmethacrylate or metal prosthesis; cortisone injections for chronic synovitis during five years before surgery; air conditioning system or soaking solution to rinse the prosthetic device; soap in the water, where it was accomplished the immersion of the foot (podiatrist's recommendations); bioabsorbable screws used in surgery; intra-articular injections of dexamethasone; however, none of them could be confirmed.

Conclusion: *M. fortuitum* was the RGM most frequent, some infections were diagnosed after one year and it contradicts CDC's definition of surgical site defined by CDC. The authors of the studies analyzed didn't follow a methodological description what compromised the conclusions.

Disclosure of interest: None declared.

P196

P196: Post-neurosurgical meningitis

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Introduction: Post-neurosurgical meningitis represents only 0.4% of all nosocomial infections. However, it presents enormous diagnostic and therapeutic challenge with increasing rates of multidrug resistant organisms. Hence strict infection control is of paramount importance.

Objectives: To study the etiology, management and risk factors of post-neurosurgical meningitis.

Methods: A prospective and retrospective observational study of six patients admitted over a period of one year, who developed meningitis following various neurosurgical procedures. Antimicrobial treatment was initiated empirically based on clinical and epidemiological background and later modified based on results of culture and susceptibility. Retrospectively, risk factors associated with each case were analyzed.

Results: Patients had undergone either intracranial or spinal neurosurgical procedures with placement of ventricular or spinal drains. Features of meningitis developed between 3 days to 2 months after surgery. Various organisms isolated were *Staphylococcus aureus*, vancomycin resistant enterococci (VRE), *Escherichia coli*, *Pseudomonas aeruginosa*, *Pseudomonas stutzeri* and *Klebsiella pneumoniae*. Antibiotics used for treatment included cloxacillin, linezolid, daptomycin, meropenem, ceftriaxone, ciprofloxacin and colistin; based on organism identification and susceptibility.

1 patient with lumbar drain related meningitis, treated with meropenem and intrathecal colistin showed dramatic response. 1 patient with external ventricular drain (EVD) related meningitis caused by *Klebsiella pneumoniae* and another with infected pseudomeningocele by *Pseudomonas stutzeri*, also improved. 3 patients did not respond well and expired. Of these, 1 had infection with VRE, and 2 had incomplete source control with retention of foreign implants.