The overall MDRO rectal colonization rate was 67.7%, with MDR-*E. coli* at 49.2%, MDR-AB at 20.1%, MDR-*K. pneumoniae* at 18.0%, and MDR-*P. aeruginosa* at 2.7%. The colonization rate for MDROs was 56.1% on day 1, and it was 73.5% by day 3, 71.4% by day 7, and 81.8% by day 14 or longer. In addition, the MDR-AB colonization rate and proportion of MDR-AB versus all MDROs isolated from the rectums of ICU patients were also positively associated with the length of stay in ICU (Table 1).

We implemented a series of interventions, including enhancing the adherence to hand hygiene, disinfecting the environment using Metrex CaviWipes (Metrex) immediately after MDROs detection, and contact isolation. After interventions, the overall MDRO and MDR-AB contamination rates in the surrounding environment decreased to 10.7% and 7.1%, respectively (Table 1). Nevertheless, the overall MDRO and MDR-AB rectal colonization rates showed no significant differences (69.8% and 17.9%, respectively).

These results show that contamination and colonization with MDROs, particularly MDR-AB, in the surrounding environment and rectums of ICU patients, are augmented with increasing of length of stay in ICU. The phenomenon could be explained by the spread of organisms from contaminated sites to other surfaces, the contamination of the environment by sputum, feces, blood, and body fluids from patients, and the selective pressure exerted by antibiotic use. Furthermore, *Acinetobacter* spp. are able to survive on inanimate surfaces for a long time,[3] thus the proportion of MDR-AB versus all MDROs on the surrounding environmental surfaces increased with length of stay in ICU. Therefore, more efforts should be put towards the cleaning and disinfection of the surrounding environment of patients, particularly those who stay in ICU for an extended time. Conventional interventions could lead to the decontamination of MDROs on the surrounding environmental surfaces; however, these procedures will not reduce rectal colonization of gram-negative MDROs. Additional measures, including decreasing unnecessary antibiotic exposure, decontamination of the digestive tract, and chlorhexidine bathing,[5] are needed for the decolonization of endosomatic MDROs.

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Seasonal Variation of Surgical Site Infections: Why Does It Occur, Why Does It Matter?

To the Editor—I read the article by Durkin et al[1] on the seasonal variation of common surgical site infections (SSIs) with great interest and would like to commend the authors for performing this multicenter study. As stated by the authors, the finding of higher rates of SSIs during warmer months had been previously reported,[2–5] and the current work further corroborates such observation. As a result, the most important question is perhaps no longer whether seasonal variation in SSIs can occur, but rather, what is the basis for this observation? Although Durkin et al primarily invoke an increase in skin and soft-tissue infections during warm and humid months in the general population as an explanation for their findings, a question remains regarding why an excess number of SSIs is occurring despite standard perioperative practices, to which participating hospitals routinely are assumedly adhering irrespective of the month of the year. To explore this question further, I would like to propose a more systematic examination of pre-, intra-, and postoperative factors that may be subject to seasonal change, some of which might have been considered but were not discussed by the authors.

Concerning preoperative variables, factors that may be associated with higher bacterial burden on the patient's skin during warm and humid months,[1] such as excessive perspiration,[6] should be considered in more detail. To this end, it would have been helpful for Durkin et al to have commented on the standard screening and/or decolonization practices for *Staphylococcus aureus* carriage, if any, as well as preoperative skin hygiene practices by patients such as routine antiseptic body wash within 24 h prior to surgery[7,8] at participating hospitals. Furthermore, it might have been helpful to report the number of patients who underwent "same-day" surgery (ie, were admitted to the hospital on the day of an elective surgery) vs those who had already been hospitalized for ≥1 day prior to their surgery. In 1998, at a time when an increasing number of surgical procedures were being performed on the same-day admission or outpatient basis, we reported a significantly higher-than-expected rate of SSIs among patients who underwent spinal surgery as a same-day procedure during "warm months" (April–September) but not "cold months" (October–March), compared with those who had already been hospitalized for ≥1 day; this finding was noted despite lower National Nosocomial Infection Surveillance System (NNIS) surgical risk index in the same-day surgery group.[5] Based on these findings, we hypothesized that suboptimal skin hygiene of patients without preoperative hospital stay, with its possible lower likelihood of adequate body wash, particularly of the back, on the night before surgery might have contributed.[5] In addition, we surmised that an expected increase in perspiration of patients (particularly involving their backs during their automobile ride to the hospital) might have played a role.[5] Indeed, it is interesting to note that 3 of 4 previous studies demonstrating the seasonality of SSIs involved spinal procedures[2,4,5] and, when reported by individual surgical procedures, only laminectomy was significantly associated with higher SSI rates during the summer months in the current study; spinal fusion surgery was also associated with higher SSIs rates during summer months but did not reach statistical significance.[1] Other preoperative factors such as the timing of prophylactic antibiotic administration and antiseptic preparation of the operative site, are less likely to be subject to seasonal variation and are unlikely to explain the excess number of SSIs during the summer months.

Among potential intraoperative factors, the skill and experience of the surgeon cannot be ignored. Unless a study involves teaching institutions that begin their surgical training in the summer months (which was not the case in the great majority of hospitals included in the current study[1]), however, this factor is also unlikely to explain the seasonality of SSIs in non-teaching hospitals. In addition, it is intriguing to consider the possibility of excessive sweating by the surgical staff, particularly the surgeon, as a potential factor either due to the direct contact of the sweat with the patient's wound or due to the increased shedding of organisms in the operating room attendant with perspiration.[9]

As for potential postoperative variables, the same conditions that are conducive to excess growth of skin pathogens during the preoperative period may play a role in the contamination of the wound postoperatively while the wound is still healing.[10] Interestingly, a recent prospective study involving cardiac surgery patients found a similar reduction in superficial (but not deep or organ space) SSI rates irrespective of whether a regimen of chlorhexidine body wash and mupirocin nasal ointment was initiated before or after surgery.[8] This finding supports the potential role of postoperative contamination of surgical wounds in the causation of superficial SSIs.[10]

In this regard, it might have been helpful for Durkin et al to have reported superficial and deeper space SSI rates separately to determine whether seasonal variation affected these SSIs equally.

In brief, I believe the work of Durkin et al nicely complements existing published studies supporting seasonal variation of SSIs at least in certain surgical procedures. More critical exploration of the underlying reason(s) for this finding will not only shed light on why SSIs may be more likely during summer months but will also enhance our understanding of why SSIs occur in the first place.

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