



Using care bundle to reduce surgical site infections at a Caesarean section

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Objectives

Internationally, the industry has established a care bundle to prevent surgical site infections. In Taiwan, since 2016, a multi-center approach has been adopted to introduce combined bundle elements for the prevention of surgical site infections. In hope to establish implementation experience for the country to facilitate future reference extending to all hospitals nation-wide. This study evaluates the effectiveness of using care bundle in reducing surgical site infections of Caesarean section.



Figure 1. The Bundle Elements to Prevent SSI

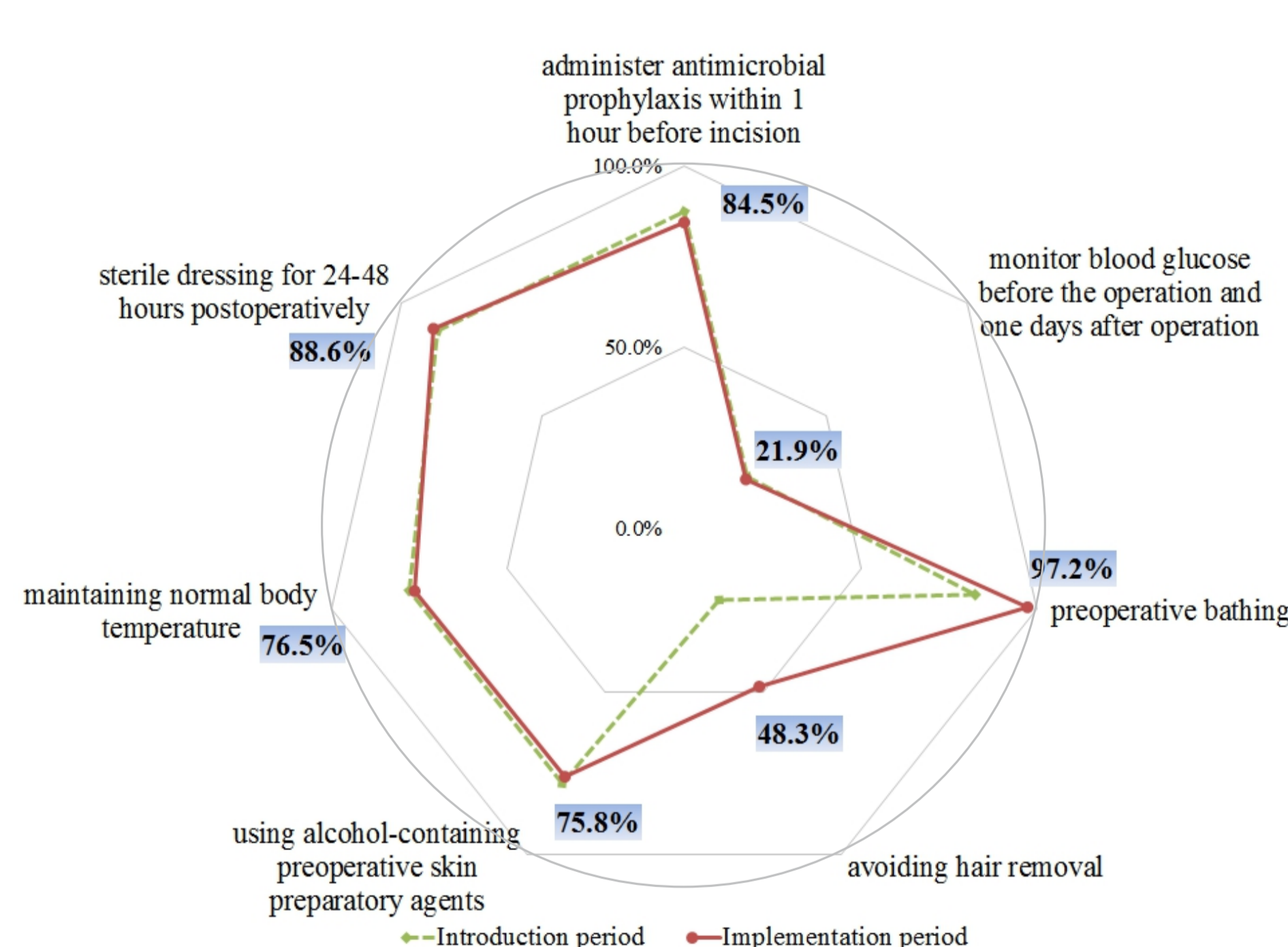


Figure 2. The Compliance rates with SSI bundle elements at Caesarean section

Methods

This study was conducted to collect information from 9 participating hospitals in August 2016 to July 2017. The participating hospitals reported the number of surgical cases, the number of infected persons and the compliance with each care bundle monthly to the Joint Commission of Taiwan (JCT). The objectives of early study period (August 2016 to January 2017) were to introduce outcomes measures and staff training and for later period (February to July 2017) was to continuously implement care bundle. The compliance of care bundle is determined whether all requirements were met., including prophylactic antibiotics should be administered within 1 hour of incision time, preoperative and postoperative glucose control on the first day, preoperative bathing, avoid hair be removed if necessary using a clipper, use alcohol-based for skin antiseptis, maintaining normo-thermia and aseptic technique for wound caring (Fig 1). The study use of Chi-square test to test the pre-study and post-study change in surgical site infection rates and compliance rates.

Results

A total of 4,084 Caesarean section surgeries were collected during the study period. A total of 2,108 surgeries were collected during the pre-study period and 1,976 surgeries were collected during the post-study period. The surgical site infection rates were 0.6% and 0.4%($P > 0.05$), respectively. After the introduction of pre-study measures and personnel training, the overall compliance rate of post-study care bundle increased 3.3 times ($P < 0.05$) over the pre-study period. Among them, the appropriate hair removal compliance rate increased by 26.0%, followed by preoperative bathing promotion by 14.8%, and the compliance rate of 97.2% was the highest among the elements(Fig 2).

Conclusion

The Caesarean section care bundle aims at implementation period to increase awareness of behavioral changes, such as the don't use of razor for hair removal and preoperative bathing. It is suggested that should be continuously promoted the care bundle to prevent surgical site infections, enhance the medical staff awareness of the care bundle of surgical site infection. Even though pre- and postbundle periods' infection rates were very low, the selection of elements on this project, in addition to preoperative bathing, the other bundle elements should be continuously promoted to enhance compliance rate, such as : prophylactic antibiotics should be administered within 1 hour of incision time, preoperative and postoperative glucose control on the first day, avoid hair be removed if necessary using a clipper, use alcohol-based solution for skin antiseptis, maintaining normo-thermia and aseptic technique for wound caring. We are hoping that the bundle can be applied to other surgeries as well.

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