Avoiding pressure ulcers: beyond proper positioning

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Over the past years, pressure injuries have been known by various names, such as decubitus ulcers, pressure sores, and bed sores. In 2016, the National Pressure Ulcer Advisory Panel made a unanimous decision to use the term pressure injury instead of pressure ulcer. Although this term is a more correct definition from the pathological condition perspective, this change has caused an enormous stir of debate. Some researchers argued that changing the name alone cannot improve the outcomes [1]. However, we cannot differentiate these terms about ulcers in Korean, which reflects our indifference to pressure ulcers.

In this issue of *the Korean Journal of Anesthesiology*, Kim et al. [2] raised our awareness of postoperative pressure ulcers. They identified that preoperative albumin and lactate levels are associated with pressure ulcers. The risk of pressure ulcers associated with intraoperative management has been less studied, despite high morbidity and high cost because of ulcers [3]. The available literature reviews have indicated that the prevalence of pressure ulcers in critically ill patients is up to 56%, and the rate is higher in surgical patients (up to 66%) [4,5]. The positioning and use of pressure-reducing surfaces were emphasized to prevent postoperative pressure ulcers. A recent study showed that the intraoperative administration of blood products was associated with pressure ulcers [6]. However, it was unclear whether the need for transfusion indicated more extensive surgery and greater blood loss and therefore a greater likelihood of reduced skin perfusions. Additionally, that study did not evaluate the involved laboratory factors. Kim et al. [2] created a matched data set of patients with and without pressure ulcers, after adjustment

for patient preoperative characteristics, laboratory data, and comorbidities. Although intraoperative blood loss was included as an independent risk factor in the univariate analysis, the multivariate analysis revealed that baseline albumin and lactate levels were significantly associated with postoperative pressure ulcers. Further studies are required to confirm the effect of albumin administration on the development of pressure ulcers using a randomized controlled design.

The current study has few limitations. The lack of obvious modifiable factors is the main limitation. Pressure ulcers should be preventable. But the question as to how albumin and lactate levels can be controlled to prevent pressure ulcers remains unanswered. In Korea, the insurance policy does not allow albumin administration if the albumin level exceeds 3.0 g/dl. Lactate is an end product of anaerobic metabolism and is elevated upon tissue hypoxia. Lactate can be a useful biomarker of pressure ulcers. However, typically, there is no action performed to reduce lactate levels in the perioperative period.

It is not too much to emphasize the importance of positioning and use of pressure reducing surfaces to reduce the risk of pressure ulcers. In addition to this management, we must focus on preoperative and intraoperative risk factors.

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