Clin Exp Nephrol (2015) 19:984
DOI 10.1007/s10157-015-1093-3

LETTER TO THE EDITOR

Washing out potassium absorption filters with normal saline after use

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Received: 26 January 2015 / Accepted: 3 February 2015 / Published online: 14 February 2015

Keywords Potassium absorption filter · Hyperkalemia · Renal dysfunctions

To the Editor,

The potassium concentration of irradiated red cell bags generally increases during the storage period. When blood products with increased potassium concentrations are administered to patients with renal dysfunctions, there is a high risk of causing hyperkalemia. In these cases, a filter (KPF-4, Kawasumi Laboratories, Tokyo, Japan) to adsorb the potassium in the red cell bags is useful [1, 2]. It has been reported that the filter is effective for use during surgery as large volume blood transfusions are required [3, 4], but it is also useful to patients of renal dysfunctions.

The potassium-adsorption filter contains cation exchange resins that exchange sodium and potassium, and thus is able to adsorb and eliminate potassium from the blood products. The filter is extremely convenient and effective, but care is needed after use. When normal saline is used to wash out the filter after the administration of blood products, there is a risk of high administration of potassium to the patient owing to reprecipitation of the adsorbed potassium. We rinsed a filter with approximately 100 ml of normal saline after using 4 units of blood products and disconnect from a patient; when a part of the saline solution was examined, a high concentration of potassium (approximately 9–17 mmol/l) was detected. This danger is listed in the warning section of product information, but many physicians are unaware of this information. Blood transfusion products are precious and limited resources; thus, it is necessary to use them as efficiently as possible. For this reason, after the completion of blood transfusions, normal saline is sometimes added to the blood product remaining in the standard blood transfusion filters and administration lines and administered to the patients. However, when using the potassium-adsorption filter, washing out the filter with normal saline is dangerous. We suggest that care is especially needed not only in the operating room but also in the unit where many patients with severe renal dysfunction are treated.

Conflict of interest None.

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