KSN 2021
FULLY VIRTUAL MEETING
September 02 (Thu) - 05 (Sun)

Oral Communication Abstract
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The effect of a patient blood management program on renal outcome in patients with chronic kidney disease

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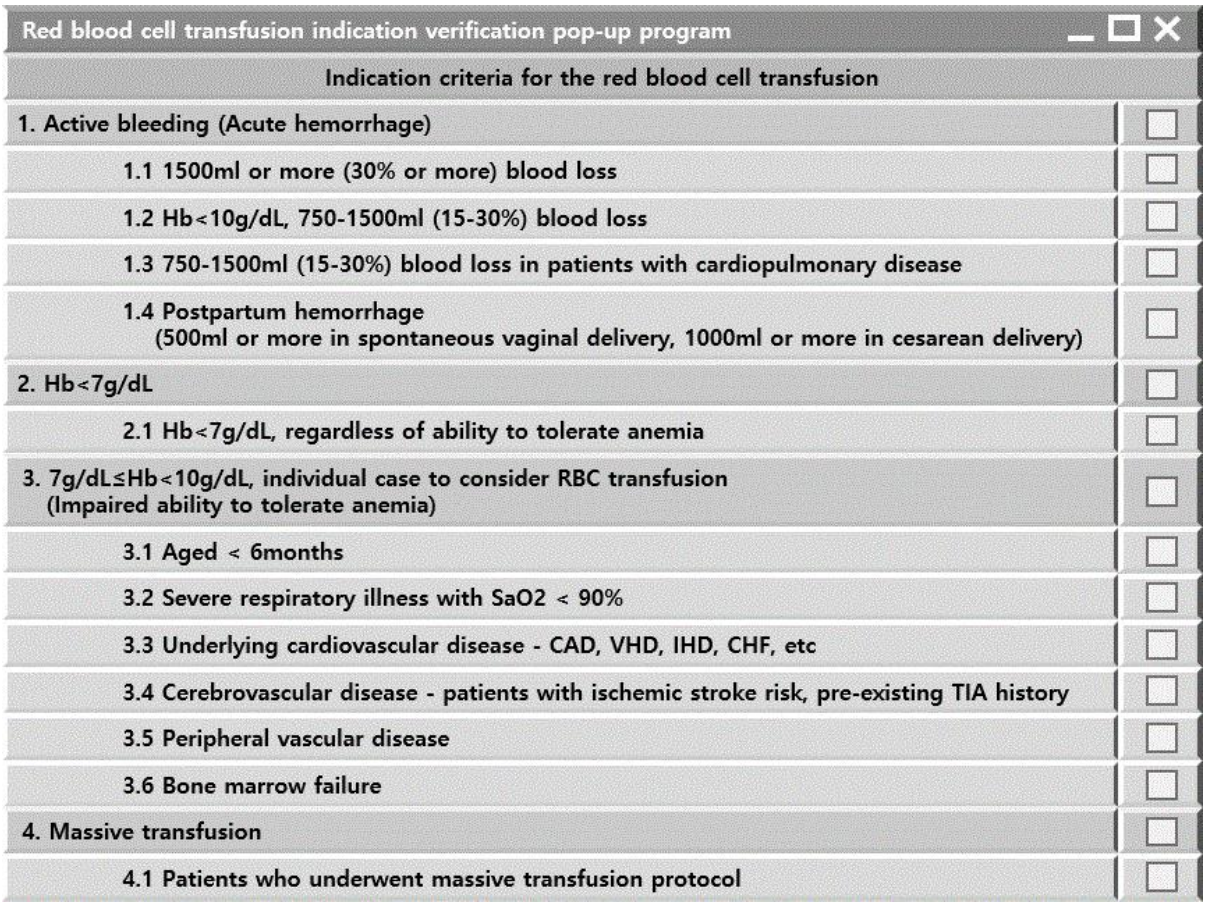
Objectives: Transfusion burden is high in CKD patients to treat anemia. However, transfusions had risks including volume overload, alloimmunization, blood stream infections and thromboembolism. We evaluated the effect of a monitoring program to identify appropriate transfusions in CKD patients.

Methods: Based on the guidelines of the Korean Society of Blood Transfusion, Korea University Anam Medical Center developed a verification program to assess the adequate indication of transfusion (patient blood management (PBM)) in August 2018. We analyzed 1,192 CKD patients admitted to the department of nephrology from August 2016 to July 2020. Patients were divided into two groups: patients who admitted before the implementation of PBM (pre-PBM (n=592)) and after the implementation of PBM (post-PBM (n=600)).

Results: The amount of blood transfused was 628 units in pre-PBM group and 443 units in post-PBM group. The patients who received more than 2 units was significantly lower in post-PBM group (20.1% vs. 13.5%, p=0.002). There were no differences in the administered doses of erythropoietin and iron between the groups. Although hemoglobin (Hb) (10.5±2.0 vs. 10.3±2.2) were not different between the two groups at admission, Hb levels were significantly lower in post-PBM group at discharge (10.4±1.8 vs. 10.1±2.0, p=0.010) and 6 months after admission (11.5±1.9 vs. 11.1±2.0, p=0.007). Kaplan-Meier analysis showed a survival benefit of CKD progression (≥50% increase in serum creatinine) (p<0.001) and percutaneous coronary intervention (p=0.030) in the post-PBM group. The incidence of end stage kidney disease or mortality was not different between groups. In multivariate analysis, PBM was associated with lower risk for CKD progression (HR of 0.587; 95% CI 0.416-0.830).

Conclusions: Patient blood management program may reduce inappropriate RBC transfusion. Implementation of PBM was associated with lower risk of CKD progression in hospitalized CKD patients.

Fig 1. Indication verification pop-up program for red blood cell transfusion in KUMC



Red blood cell transfusion indication verification pop-up program	
Indication criteria for the red blood cell transfusion	
1. Active bleeding (Acute hemorrhage)	☐
1.1 1500ml or more (30% or more) blood loss	☐
1.2 Hb<10g/dL, 750-1500ml (15-30%) blood loss	☐
1.3 750-1500ml (15-30%) blood loss in patients with cardiopulmonary disease	☐
1.4 Postpartum hemorrhage (500ml or more in spontaneous vaginal delivery, 1000ml or more in cesarean delivery)	☐
2. Hb<7g/dL	☐
2.1 Hb<7g/dL, regardless of ability to tolerate anemia	☐
3. 7g/dL≤Hb<10g/dL, individual case to consider RBC transfusion (Impaired ability to tolerate anemia)	☐
3.1 Aged < 6months	☐
3.2 Severe respiratory illness with SaO2 < 90%	☐
3.3 Underlying cardiovascular disease - CAD, VHD, IHD, CHF, etc	☐
3.4 Cerebrovascular disease - patients with ischemic stroke risk, pre-existing TIA history	☐
3.5 Peripheral vascular disease	☐
3.6 Bone marrow failure	☐
4. Massive transfusion	☐
4.1 Patients who underwent massive transfusion protocol	☐