Periprocedural transfusion in patients undergoing transfemoral transcatheter aortic valve implantation

Abstract:
Objectives: The aim of this investigation was to identify patients characteristics and periprocedural variables related to periprocedural transfusion in transfemoral Transcatheter Aortic Valve Implantation (tf-TAVI). Background: Transfusion of allogenic red-blood cells (RBC) in tf-TAVI and the number of transfused units has been linked to an increased 30-day mortality. In line with the trend of minimization and cost-effectiveness, transfusion should be avoided, wherever possible.

Methods: Between 2007 and 2015, 1,734 procedures were analyzed from our prospective registry for RBC-transfusion. Multiple logistic regression analysis was used to identify the dependent variables.

Results: Transfusion was considered necessary in 14% (n = 243) of the patients. Female gender (OR [95% CI]) (1.680 [1.014-2.783]) and preprocedural moderate (7.594 [4.404-13.095]) and severe anemia (8.202 [0.900-74.752]) according to WHO were the most important preprocedural variables. Periprocedural, pericardial effusion (12.109 [3.753-39.063]), emergency extracorporeal circulation (54.5288 [6.178-481.259]) and major vascular injury (2.647 [1.412-4.962]) were related to transfusion. The same applies to moderate (4.255 [1.859-9.740]) and severe anemia (31.567 [8.560-116.416]) as well as periprocedural experience (0.072 [0.007-1.000]).
Conclusion: Procedural experience, serious adverse events, low pre- and periprocedural Hb levels and female gender were the main variables relating to transfusion. Even in experienced high-volume centers, transfusion is still necessary in a considerable number of patients.