

Abstract Submission No.: A-1120

**Comparative Analysis of Predictive Criteria for Unassisted Maturation of AVF
Using Post-Operative Ultrasound Measurement: UAB vs NKF-KDOQI**

Seung Yun Chae, Seyoung Ryou, Hyeran Park, Dohyun Na, Hanbi Lee, Yaeni Kim, Byung Ha Chung, Cheol Whee Park, Chul Woo Yang, Hoon Suk Park
Department of Internal Medicine-Nephrology, The Catholic University of Korea Seoul St. Mary's Hospital, Korea, Republic of

Objectives : The study aimed to assess the predictive performance of the University of Alabama at Birmingham (UAB) criteria versus the NKF-KDOQI guidelines in determining the likelihood of unassisted arteriovenous fistula (AVF) maturation. Additionally, we aimed to investigate how the predictive performance of these criteria differs between upper arm AVFs and forearm AVFs.

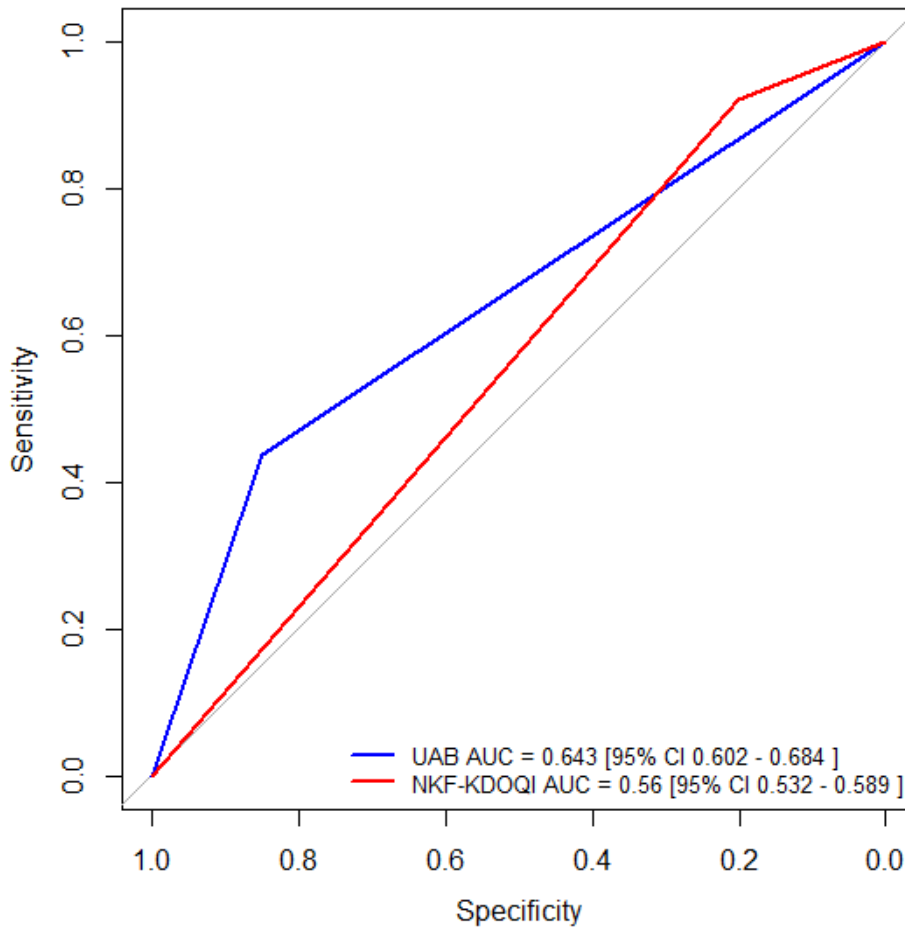
Methods : We retrospectively analyzed the age, gender, BMI, and comorbidities of chronic kidney disease patients who underwent AVF creation and were followed up from January 2017 to March 2021 at a single medical center. Additionally, we examined the types of AVFs, the success of the first cannulation, and postoperative AVF ultrasound measurements.

Results : Among a total of 560 patients, unassisted maturation of AVFs was confirmed in 68.6% of cases. Specifically, the unassisted maturation rate for upper arm AVFs was 70.2%, which was higher than the rate of 66.8% observed for forearm AVFs. While the positive predictive value for the overall unassisted maturation of AVFs was higher for NKF-KDOQI at 0.85 compared to UAB's 0.77, UAB demonstrated superior negative predictive value at 0.57. Evaluating the predictive abilities of both criteria through Receiver Operating Characteristic Curve analysis, UAB (AUC = 0.643 (95% CI 0.602 – 0.684)) outperformed NKF-KDOQI (AUC = 0.56 (95% CI 0.532 – 0.589)) in predicting unassisted maturation of overall AVFs. Notably, when predicting unassisted maturation for forearm AVFs, UAB (AUC = 0.654 (95% CI 0.593 – 0.715)) demonstrated superiority over NKF-KDOQI, whose predictive ability (AUC = 0.517 (95% CI 0.494 – 0.540)) approached random chance.

Conclusions : In conclusion, the UAB criteria demonstrated superiority in predicting the overall unassisted maturation of AVFs compared to the NKF-KDOQI guideline. This trend was particularly pronounced in the case of forearm AVFs, where the predictive ability of NKF-KDOQI criteria for unassisted maturation was found to be close to random chance.

ROC curve for Overall AVFs.png

ROC Curves for Total AVFs



ROC curve for Overall AVFs.png

ROC Curves for Forearm AVFs

