Does MEST-C Score Predict Outcomes in Pediatric HSP Nephritis?

Introduction
Henoch-Schönlein purpura is the most common systemic vasculitis in children. Characterized by IgA immune complex deposition in the skin, joints, GI tract, and kidney.1 Henoch-Schönlein purpura nephritis (HSPN) occurs in 1/3 of children and is a significant cause of chronic kidney disease.2 The International Study of Kidney Disease in Children classification is used to classify HSPN however it is poorly associated with outcomes.3 The 2016 Oxford Classification’s MEST-C predicts outcomes in histologically identical IgA nephropathy but its utility in HSPN is incompletely described.4

Aim of Study
Our hypothesis is that MEST-C score predicts poor renal outcomes in pediatric HSPN patients.

Methods
32 children with HSPN with a renal biopsy between April 1, 2004 and March 1, 2018. Logistic regression and ROC curves were used to analyze the ability of MEST-C to predict the composite outcome Hypertension: Blood pressure ≥95%
Chronic kidney disease: Glomerular filtration rate <90 mL/min/1.73 m²
Proteinuria: Protein-to-creatinine ratio >0.2 mg/mg

Results
Cohort Characteristics
Median age 7.9 year [IQR 5.9]
Male sex 56%
Race
White 72%
Black 9%
Hispanic 19%
Median follow up 2.7 years [IQR 4.3]
% reaching the outcome 34%

Conclusion
S1 accurately predicted the outcome at last follow up in a diverse cohort of U.S. children with HSPN.
Total MEST-C score >2 may have predictive utility.
MEST-C score may prove useful in predicting outcomes in HSPN and guiding treatment.

References

Figure 1 MEST-C scores by outcome (blue). S1 (OR 10.5, 95% CI 1.9-59.4) and score >2 were associated with the outcome (5.0, 0.9 to 28.6).

Figure 2 ROC curve for S1 predicting the outcome.

AUC 0.75
95% CI 0.58 to 0.91

Sensitivity 63.6%
Specificity 85.7%
PPV 70.8%
NPV 81.8%

Figure 2 ROC curve for S1 predicting the outcome.