

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

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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 kidney¹

Henoch-Schönlein purpura nephritis (HSPN) occurs in 1/3 of children and is a significant cause of chronic kidney disease²

The International Study of Kidney Disease in Children classification is used to classify HSPN however it is poorly associated with outcomes³

The 2016 Oxford Classification's MEST-C predicts outcomes in histologically identical IgA nephropathy but its utility in HSPN is incompletely described⁴

Aim of Study

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

MEST-C Criteria in the 2016 Oxford Classification

Variable	Definition
Mesangial hypercellularity	>4 mesangial cells
Endocapillary hypercellularity	Hypercellularity within capillary lumen
Segmental glomerulosclerosis	Sclerosis in glomerular tuft
Tubular atrophy / interstitial fibrosis	% of atrophy or fibrosis
Crescents	% of glomerular fibrocellular crescents

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 $\geq 95\%$

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 %

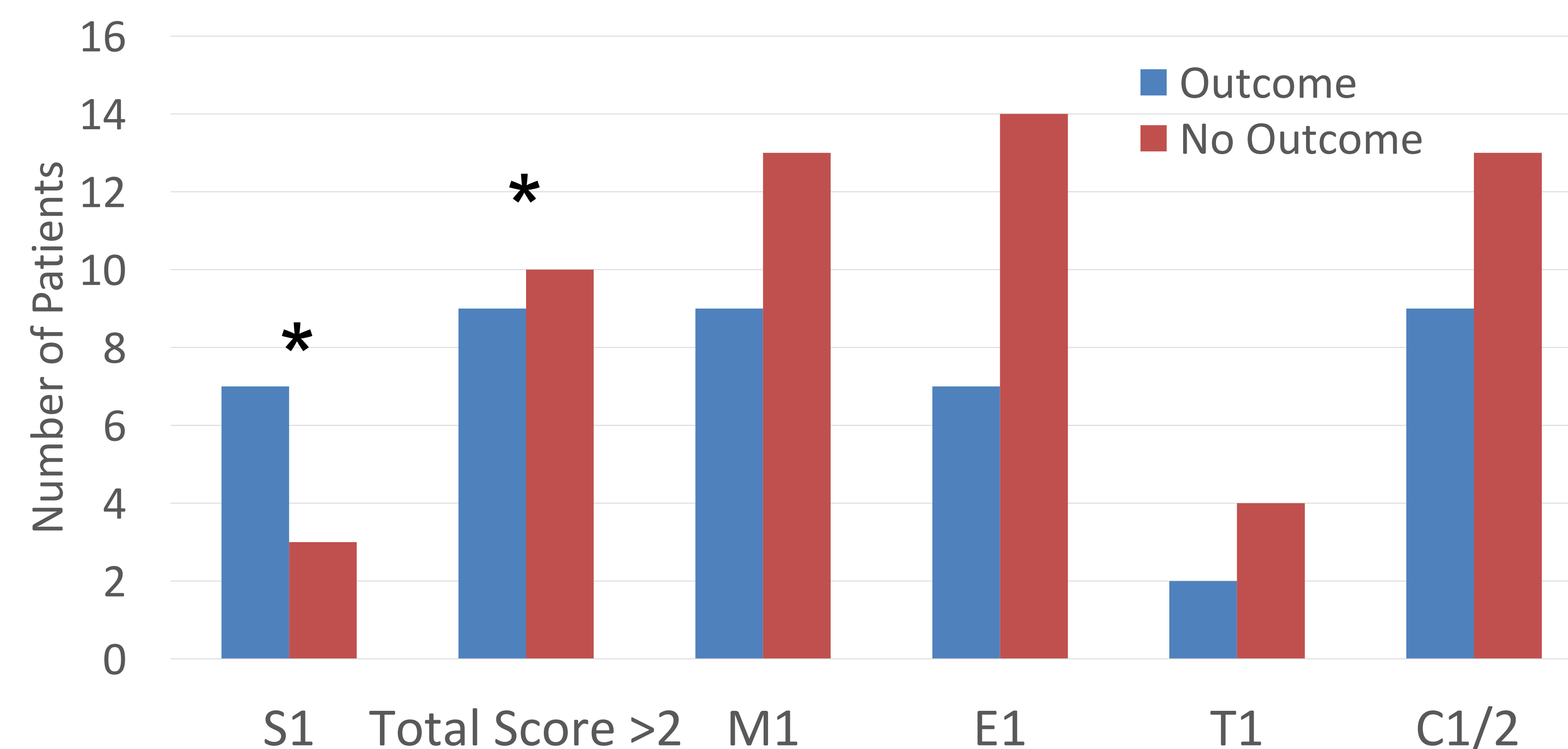


Figure 1 MEST-C scores by outcome (blue). S1 (OR 10.5, 95% CI 1.9-59.4) and score >2 were associated with the outcome (5.0, 0.9 to 28.6).

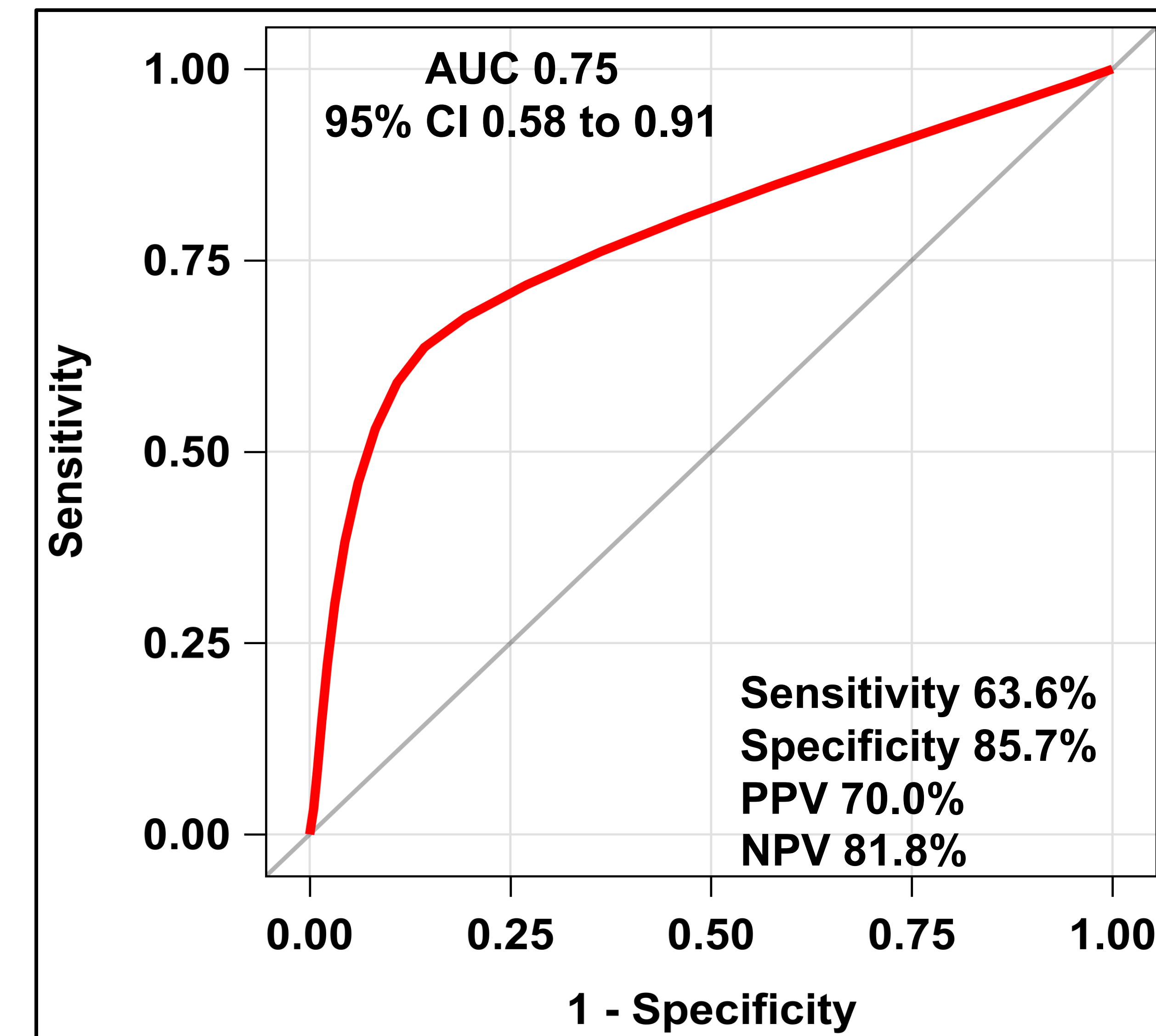


Figure 2 ROC curve for S1 predicting the outcome.

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

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