Kidney Transplantation in Patients with Complement Gene Mutations: A Single-centre Experience from Central India

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Disclosures

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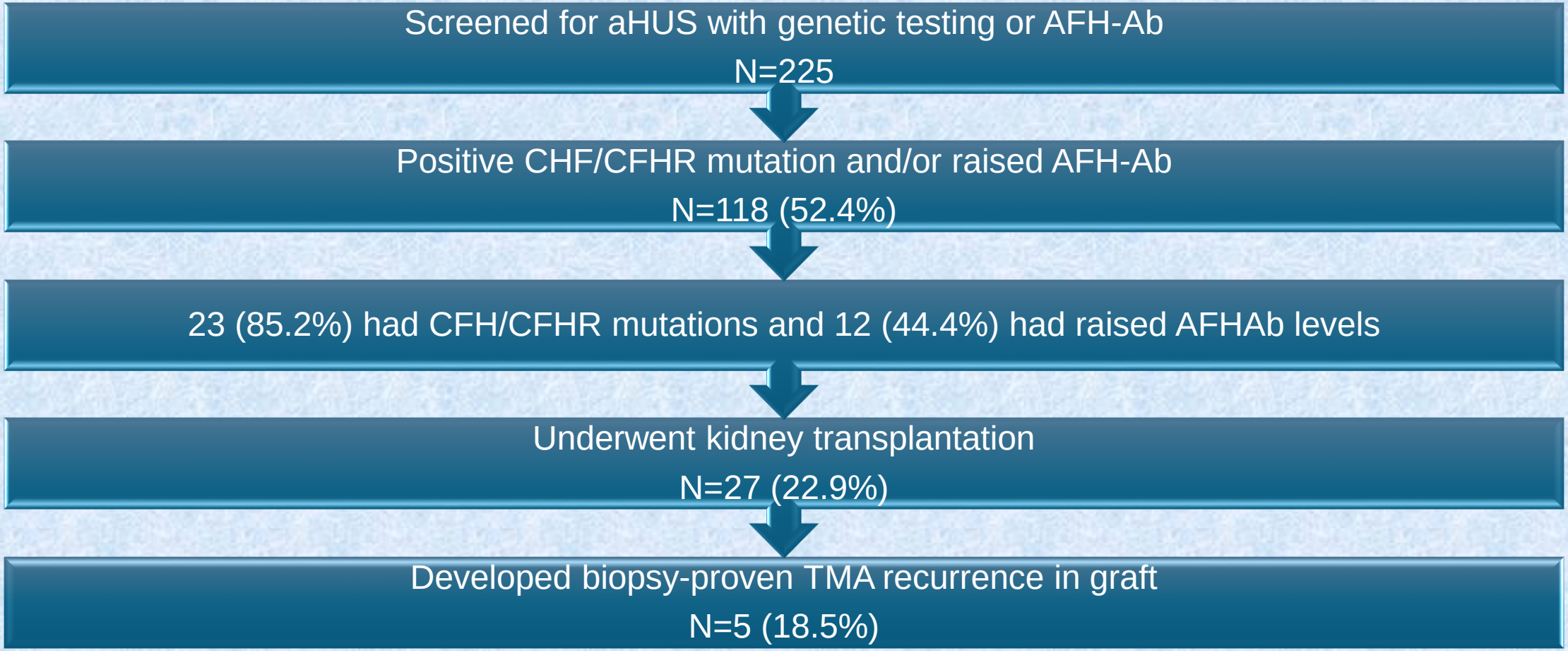
Introduction

- aHUS has high likelihood of recurrence in transplanted kidney and may result in graft loss and mortality.[1]
- With limited treatment options in India, thrombotic microangiopathy (TMA) due aHUS recurrence needs to be diagnosed early, and appropriate therapy needs to be initiated at the earliest. [2]
- The objective of this study was to assess the outcomes of TMA due to aHUS recurrence in kidney transplant (KT) recipient.
- We analyzed the data of KT recipients who were diagnosed with biopsy-proven TMA due to aHUS.
- Genetic mutations in complement factor H (CFH) and complement factors related (CFHR) genes were determined by multiplex ligation-dependent probe amplification (MLPA). Anti-factor H antibody (AFHAb) levels were determined with ELISA.

1. Noris et al. Curr Opin Nephrol Hypertens. 2013; 22: 704-12
2. Balwani et al. Transplantation proceedings 2023; 55:1312-5.

Results


Screened for aHUS with genetic testing or AFH-Ab
N=225
Positive CHF/CFHR mutation and/or raised AFH-Ab
N=118 (52.4%)
23 (85.2%) had CFH/CFHR mutations and 12 (44.4%) had raised AFHAb levels
Underwent kidney transplantation
N=27 (22.9%)
Developed biopsy-proven TMA recurrence in graft
N=5 (18.5%)

Results

Baseline Characteristics (n=5)	
Age (range)	35.6 years (25 to 46 years)
Genetic testing	Pre-Tx – 4 (80%)
	Post-Tx – 1 (10%)
Genetic Mutations	
CFHR 1/3 duplication	4 (80%)
CFHR 1/3 heterozygous deletion	1 (10%)
AFH-Ab Testing	
Pre-transplant AFH-Ab testing	4 (80%)
Elevated AFH-Ab Pre-Tx	1 (10%)

Results

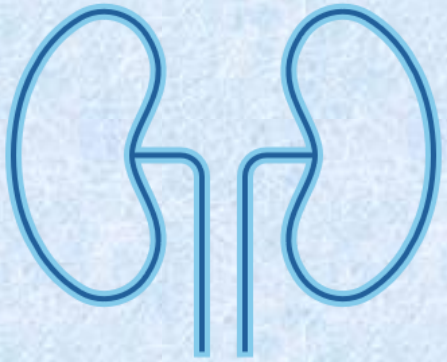
TREATMENTS

- Pre-transplant
  - Pre-emptive Plasma exchange and rituximab – 3 (60%)
- Post-transplant after aHUS recurrence
  - Plasma exchange – 5 (100%)
  - Rituximab – 2 (40%)

OUTCOMES

- Median follow up: 94 weeks
- Response to therapy with functioning graft – 4 (80.0%)
  - Mean serum creatinine:1.87 mg/dL
  - Post-treatment persistently raised AFH-Ab levels – 2 (40%)
  - No further TMA recurrence
- Graft loss – 1 (20.0%)
- Mortality – None

Conclusion



- aHUS recurrence after kidney transplant is dreadful.
- Presence of complement gene mutations in KT recipient poses unique challenges in India due to non-availability of complement inhibitors.
- PE along with rituximab may help in salvaging renal allograft after aHUS recurrence.
- Elevated AFH-Ab levels may or may not trigger aHUS recurrence in early post-transplant period.
- Further studies are necessary to assess the role of rituximab in aHUS recurrence.

Thank you.