

Nephrotic Syndrome in Malaria

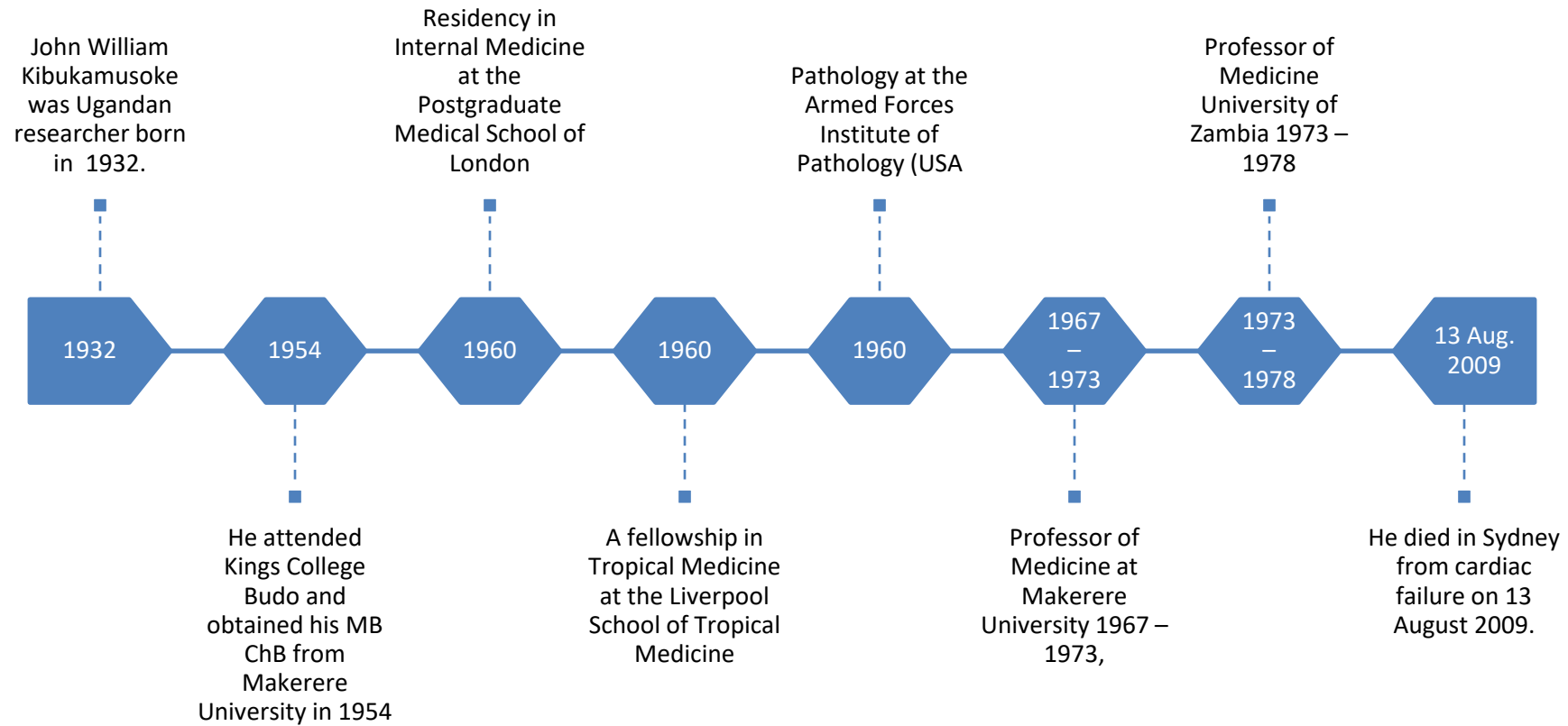
Dr. Kibukamusoke's Contributions
and Modern Implications





- JW Kibuuka-Musoke, MB ChB, FRCP, DTM &H

Career



Core work

- He developed a research program jointly with the Department of Pathology,
- He linked chronic *Plasmodium malariae* infections to nephrotic syndrome.
- His work in the 1960s–70s shaped our understanding of infection-associated glomerulonephritis.
- This presentation explores the immune mechanisms and their relevance today.

Core work

- He showed a clear association between nephrotic syndrome and chronic quartan malaria among Ugandan children, characterizing this as *quartan malarial nephropathy*
- His work shaped our understanding of infection-associated glomerulonephritis.

Leadership

- He was elected President of the College of Physicians of East Africa on two occasions (1963 & 1965). A pioneer in cancer research, Kibukamusoke was the first African President of this association

Immune Pathogenesis Overview

- Chronic *P. malariae* infections cause prolonged antigen exposure.
- The immune system generates IgM antibodies.
- Antigen-antibody complexes form and circulate in blood.
- Complexes deposit in glomeruli, triggering complement activation and inflammation.

Histological Features

- Membranoproliferative Glomerulonephritis (MPGN) observed.
- Features include:
 - Thickened basement membrane
 - Tram-track appearance
 - Mesangial hypercellularity
 - IgM and C3 deposition on immunofluorescence



Supporting Evidence

- 1969 (Lancet): Elevated immune complexes in active cases.
- 1970 (BMJ): High IgM and anti-malarial antibodies found.
- Decline in antibody levels observed during remission.
- Early evidence for immune-complex glomerulonephritis.

Modern Clinical Relevance

- Chronic malaria still present in low-resource regions.
- Modern diagnostics: ELISA, PCR, renal biopsy.
- Treatments include ACTs, RAAS blockers, supportive nephrology.
- Access to dialysis and transplant limited in some areas.

Broader Implications

- Kibukamusoke's work influenced:
 - Hepatitis B/C-associated glomerulonephritis
 - HIV-associated nephropathy (HIVAN)
 - Parasitic renal diseases
- Foundation for infection-linked nephrology.

Conclusion

Dr. Kibukamusoke identified malaria as a cause of nephrotic syndrome through immune mechanisms.

His legacy remains vital in managing renal diseases in tropical regions.

Continued relevance in research and global health nephrology.

