STANDARD TREATMENT WORKFLOW (STW)

Glomerulonephritis

Vivekanand Jha[1]; Sandeep Mahajan[2]; Manisha Sahay[3]; Arpana Iyengar[4]; Vijay Kher[5]; Gopesh Modi[6]; Swaranjeet Kaur Gill[7]; Anant Kumar Jha[8]; Vikram Singh[9]; Ranjeet Nair[10]; Vivek Kumar[11]; Vishal Golay[12]; Mukta Mantan[13]; Natarajan Ramakrishnan[14]; Narayan Prasad[15]; Ramesh Chandrababu[16]; R.K. Sharma[17]; George Abraham[18]

[1]The George Inst of Global Health; [2]All India Institute of Medical Science, New Delhi; [3]Osmania Medical College, Hyderabad; [4]St John's Medical College, Bangalore; [5]Medanta, Gurgaon; [6]Samarpan Noble Hospital, Bhopal; [7]Bathinda; [8]Civil Surgeon, Godda; [9]Dehradun; [10]R&R Army Hospital, New Delhi; [11]Post Graduate Institute of Medical Education and Research, Chandigarh; [12]Anandalok Hospital, Siliguri; [13]Maulana Azad Medical College, New Delhi; [14]NU Hospitals, Bengaluru, Karnataka; [15]Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow; [16]Sri Ramachandra Institute of Higher Education and Research, Chennai; [17]Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow; [18]Jawaharlal Institute of Postgraduate Medical Education and Research, Pondycherry

CORRESPONDING AUTHOR

Dr. Vivekanand Jha, Department of Nephrology, The George Institute of Global Health
Email: vjha@pginephro.org

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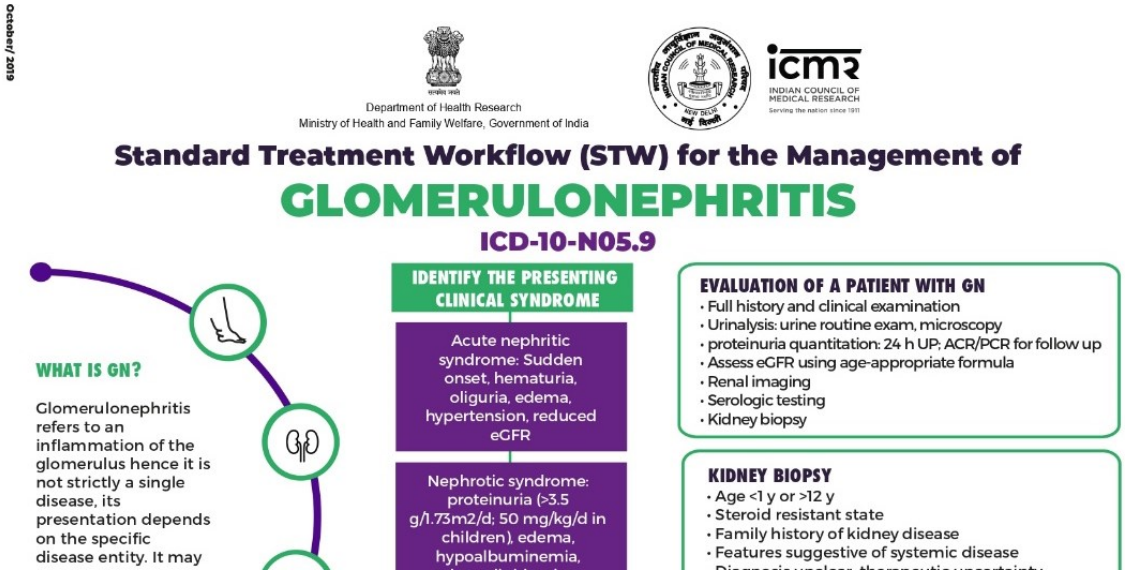

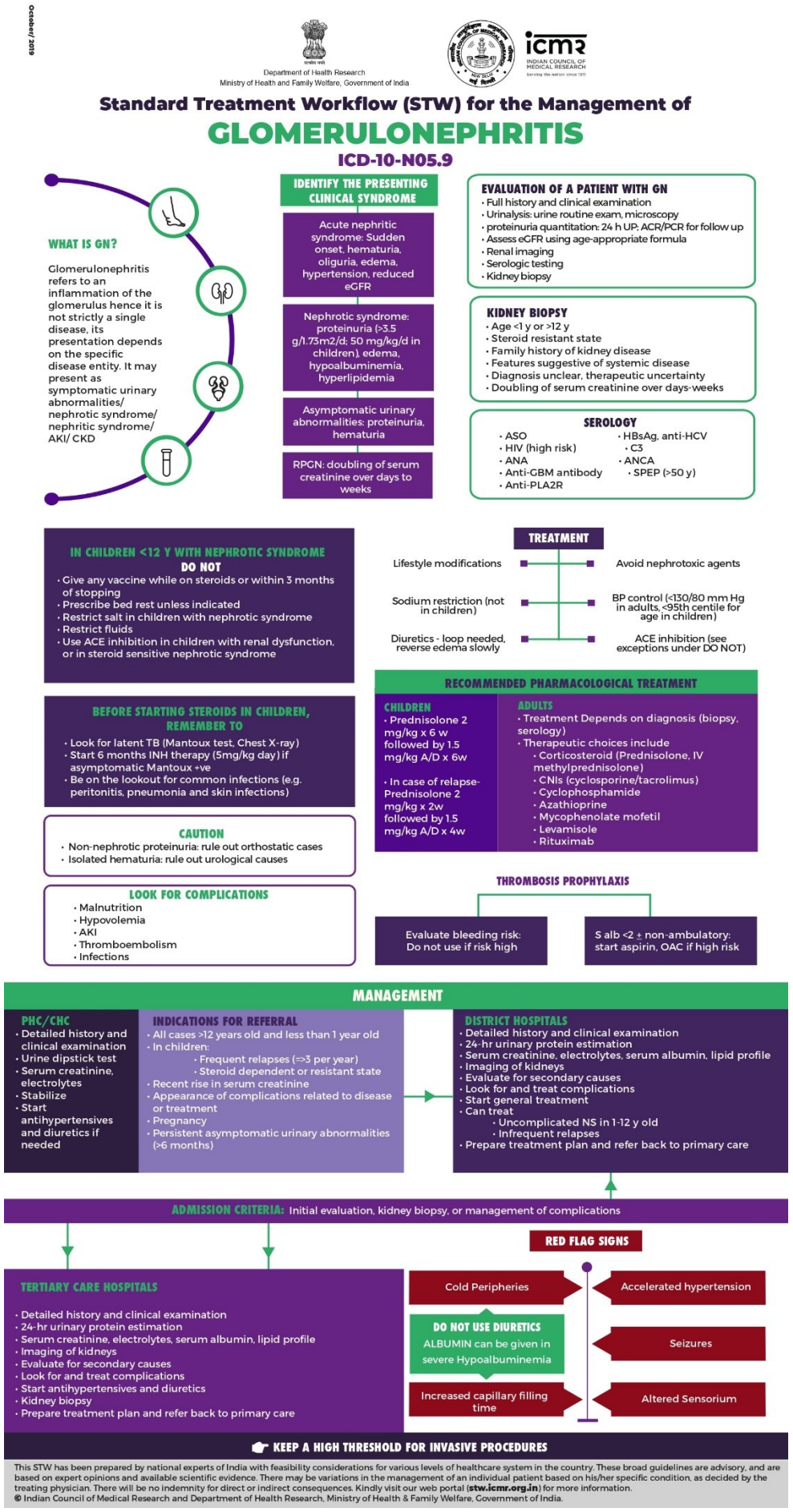
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Standard Treatment Workflow (STW) for the Management of
GLOMERULONEPHRITIS
ICD-10-N05.9
WHAT IS GN?
Glomerulonephritis refers to an inflammation of the glomerulus hence it is not strictly a single disease, its presentation depends on the specific disease entity. It may present as symptomatic urinary abnormalities/ nephrotic syndrome/ nephritic syndrome/ AKI/ CKD
IDENTIFY THE PRESENTING CLINICAL SYNDROME
Acute nephritic syndrome: Sudden onset, hematuria, oliguria, edema, hypertension, reduced eGFR
Nephrotic syndrome: proteinuria (>3.5 g/1.73m2/d; 50 mg/kg/d in children), edema, hypoalbuminemia, hyperlipidemia
Asymptomatic urinary abnormalities: proteinuria, hematuria
RPGN: doubling of serum creatinine over days to weeks
EVALUATION OF A PATIENT WITH GN
• Full history and clinical examination
• Urinalysis: urine routine exam, microscopy
• proteinuria quantitation: 24 h UP; ACR/PCR for follow up
• Assess eGFR using age-appropriate formula
• Renal imaging
• Serologic testing
• Kidney biopsy
KIDNEY BIOPSY
• Age <1 y or >12 y
• Steroid resistant state
• Family history of kidney disease
• Features suggestive of systemic disease
• Diagnosis unclear, therapeutic uncertainty
• Doubling of serum creatinine over days-weeks
SEROLOGY
• ASO
• HIV (high risk)
• ANA
• Anti-GBM antibody
• Anti-PLA2R
• HBsAg, anti-HCV
• C3
• ANCA
• SPEP (>50 y)
IN CHILDREN <12 Y WITH NEPHROTIC SYNDROME
DO NOT
• Give any vaccine while on steroids or within 3 months of stopping
• Prescribe bed rest unless indicated
• Restrict salt in children with nephrotic syndrome
• Restrict fluids
• Use ACE inhibition in children with renal dysfunction, or in steroid sensitive nephrotic syndrome
TREATMENT
Lifestyle modifications
Avoid nephrotoxic agents
Sodium restriction (not in children)
BP control (<130/80 mm Hg in adults, <95th centile for age in children)
Diuretics - loop needed, reverse edema slowly
ACE inhibition (see exceptions under DO NOT)
BEFORE STARTING STEROIDS IN CHILDREN, REMEMBER TO
• Look for latent TB (Mantoux test, Chest X-ray)
• Start 6 months INH therapy (5mg/kg day) if asymptomatic Mantoux +ve
• Be on the lookout for common infections (e.g. peritonitis, pneumonia and skin infections)
RECOMMENDED PHARMACOLOGICAL TREATMENT
CHILDREN
• Prednisolone 2 mg/kg x 6 w followed by 1.5 mg/kg A/D x 6w
• In case of relapse- Prednisolone 2 mg/kg x 2w followed by 1.5 mg/kg A/D x 4w
ADULTS
• Treatment Depends on diagnosis (biopsy, serology)
• Therapeutic choices include
• Corticosteroid (Prednisolone, IV methylprednisolone)
• CNIs (cyclosporine/tacrolimus)
• Cyclophosphamide
• Azathioprine
• Mycophenolate mofetil
• Levamisole
• Rituximab
CAUTION
• Non-nephrotic proteinuria: rule out orthostatic cases
• Isolated hematuria: rule out urological causes
THROMBOSIS PROPHYLAXIS
Evaluate bleeding risk: Do not use if risk high
S alb <2 ± non-ambulatory: start aspirin, OAC if high risk
LOOK FOR COMPLICATIONS
• Malnutrition
• Hypovolemia
• AKI
• Thromboembolism
• Infections
MANAGEMENT
PHC/CHC
• Detailed history and clinical examination
• Urine dipstick test
• Serum creatinine, electrolytes
• Stabilize
• Start antihypertensives and diuretics if needed
INDICATIONS FOR REFERRAL
• All cases >12 years old and less than 1 year old
• In children:
• Frequent relapses (=>3 per year)
• Steroid dependent or resistant state
• Recent rise in serum creatinine
• Appearance of complications related to disease or treatment
• Pregnancy
• Persistent asymptomatic urinary abnormalities (>6 months)
DISTRICT HOSPITALS
• Detailed history and clinical examination
• 24-hr urinary protein estimation
• Serum creatinine, electrolytes, serum albumin, lipid profile
• Imaging of kidneys
• Evaluate for secondary causes
• Look for and treat complications
• Start general treatment
• Can treat
• Uncomplicated NS in 1-12 y old
• Infrequent relapses
• Prepare treatment plan and refer back to primary care
ADMISSION CRITERIA: Initial evaluation, kidney biopsy, or management of complications
RED FLAG SIGNS
TERTIARY CARE HOSPITALS
• Detailed history and clinical examination
• 24-hr urinary protein estimation
• Serum creatinine, electrolytes, serum albumin, lipid profile
• Imaging of kidneys
• Evaluate for secondary causes
• Look for and treat complications
• Start antihypertensives and diuretics
• Kidney biopsy
• Prepare treatment plan and refer back to primary care
Cold Peripheries
Accelerated hypertension
DO NOT USE DIURETICS
ALBUMIN can be given in severe Hypoalbuminemia
Seizures
Increased capillary filling time
Altered Sensorium
KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES
This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (stw.icmr.org.in) for more information.
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