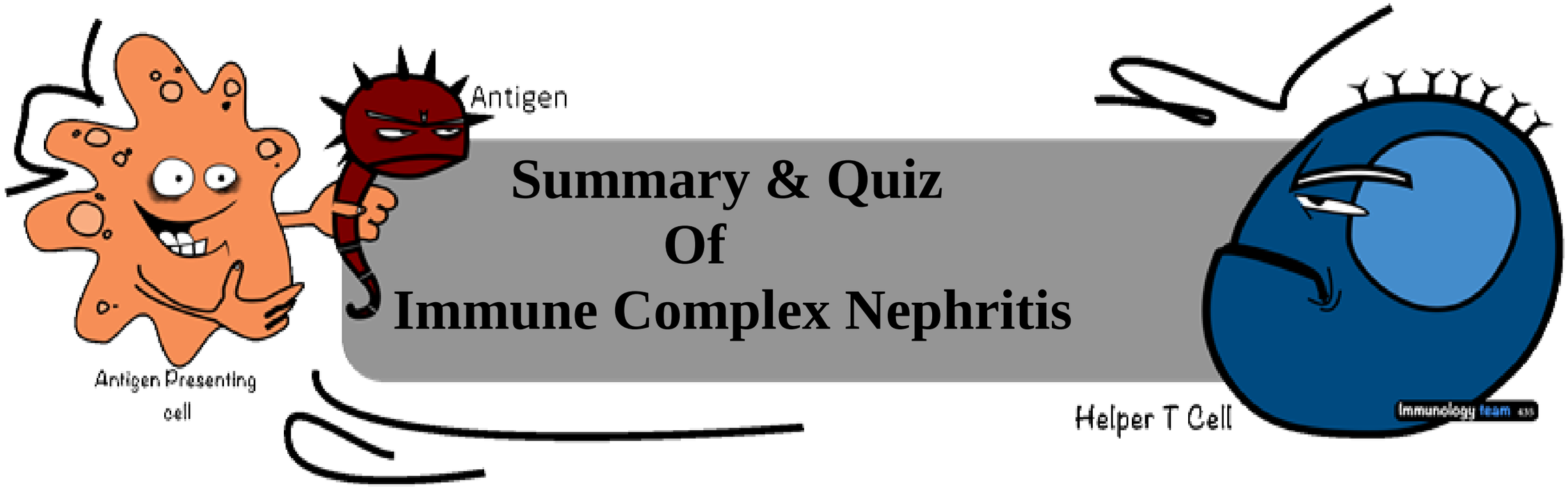

Summary & Quiz Of Immune Complex Nephritis

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FOR COLORLESS VERSION : https://drive.google.com/file/d/0B0iJe6cPKDklRVRKaWEyVmZJSm8/view

NOTE:

GBM= glomerularbasement membrane

GN= Glomerulonephritis

Hypersensitivity III

(immune complex nephritis)

DEFINITION

immune complexes form in the circulation and may deposit in different tissues.

Pathogenesis based on complex size

The small soluble immune complex is filtered in the glomerulus, it wont cause disease

Intermediate size soluble immune complexes

→

Deposition on the basement membrane of the capillaries

→Activation of complement system

→causes disease.

The large insoluble is easily eliminated by phagocytosis

Where do they deposit mostly?

Complexes accumulate in tissues where filtration of plasma occurs

–Glomerulonephritis (deposition in the kidney)

–Vasculitis (deposition in the arteries)

–Arthritis (deposition in the synovial joints)

Types of immunemediated renal injury:

Post Infectious Glomerulonephriti (Poststreptococcal)

Membranous Glomerulonephritis (Membranous nephropathy)

Membranoproliferative OR Mesangiocapillary GN

IgA Nephropathy (Berger disease)

Rapidly Progressive (Cresentic) Glomerulonephritis (RPGN)

Type I MPGN (80% of cases)

Type II MPGN

Type I (Anti-GBM antibody) (Cresentic GN)

Type II (Immune complex - mediated Cresentic GN)

Type III (Pauci-immune) Cresentic GN

Types of immune-mediated renal injury:
)Antibody-mediated Injury(

DISEASE	Post Infectious Glomerulonephritis *(GN)* (Post-streptococcal)	Membranous Glomerulonephritis (Membranous nephropathy)	Membranoproliferative Glomerulonephritis *(MPGN)* OR Mesangiocapillary GN		IgA Nephropathy (Berger disease)	Rapidly Progressive (Cresentic) Glomerulonephritis *(RPGN)*		
SUBTYPES			**Type I MPGN** (80% of cases)	**Type II MPGN** (dense deposit disease)		**Type I** (Anti-GBM antibody)	**TypeII** (Immune complex - mediated Cresentic GN)	**Type III** (Pauci-immune)
ETIOLOGY	Caused by known streptococcal types called: nephriticstrains				Begins as an episode of gross hematuriathat occurs within 1-2 days of a non specific **upper respiratory tract infection**			
EPIDEMIOLOGY		Most common between 30 - 50 years	It is a **chronic** progressive glomerulonephritis occurs in older, children and adults		-The **most common** from of primary glomerulonephritis in the world -Affects children and young adults			
ASSOCIATED DISEASE	• 7-14 days *after* **strept** pharyngitis. OR • 14-21 days *after* (skin infection) Lead to Abrupt onset (Acute nephriticsyndrome)		-hepatitis B&C antigenemia, -extra-renal infections or -SLE			- ***Goodpasture syndrome:*** Antibodies bind also in the pulmonary alveolarcapillary basement membranes	May occur as a complication of any of the immune complex nephritides: -Post infectious. -SLE - IgA nephropathy	- Most cases are associate with: Anti-neutrophil cytoplasm antibodies (ANCA) found in serum which have role in systemicvasculiti
HISTOPATHOLOGICAL CHARACTERIS	Diffuse proliferation of glomerularcells and frequent infiltration of leukocytes (especially neutrophils)		subendothelial and mesangial deposits	-Characterized by intramembranous dense deposits				
IMMUNO FLOURESCENCE MICROSCOPY	***# Typical features of immune complexdisease:*** - Hypocomplementemia - Granulardeposits of IgG & complement on GBM (lumpy-bumpy) pattern ***LABARATORY INVESTGATION:***			-The fundamental abnormality is : Excessive complement activation	-Deposition of IgA & complement C3 in the mesangium -Activation of complement by the alternative pathway (serum C2 and C4 will be normal)	Characterized by lineardeposition of IgG and C3 on the GBM	Characteristic granular(lumpy-bumpy) pattern of staining of the GBM for immunoglobulin & complement	Defined by the lack of anti-GBM antibodies
NOTES	• bacterial culture will be negative. • ASO titre. • The anti-DNAse B titre is a betterindicatorof streptococcal skin sepsis than the ASO titre.?? Because Cholesterol and lipids in skin suppress the ASO antibody responsebut not the anti-DNAse B antibody titre.	form of **chronic** immune-complex nephritis (slowly progressive disease)		Some patients have autoantibody against C3 convertase called: C3 nephriticfactor		defined as any glomerulardisease (not a specific) characterized by extensive crescents as the principal histologicfinding and by a rapid loss of renal function		

repetitive information

RE-SUMMARIZATION:

TYPES OF IMMUNE-MEDIATED RENAL INJURY	ASSOCIATED DISORDERS
Post Infectious Glomerulonephritis	↓ after strept pharyngitis. ↓ after skin infection
Membranous Glomerulonephritis	
Type 1 Membranoproliferative Glomerulonephritis	↓ hepatitis B&Cantigenemia, ↓ extra-renal infections ↓ SLE
Type2 Membranoproliferative Glomerulonephritis(densedeposit disease)	
IgA Nephropathy	
Type 1 Rapidly Progressive (Cresentic) Glomerulonephritis	↓ Goodpasture syndrome
Type 2 Rapidly Progressive (Cresentic) Glomerulonephritis	any of the immune complex nephritides: ↓ Post infectious. ↓ SLE ↓ IgA nephropathy
Type 3 Rapidly Progressive (Cresentic) Glomerulonephritis	↓ ANCA in serum →Systematic vasculitis

repetitive information

RE-SUMMARIZATION:

TYPES OF IMMUNE-MEDIATED RENAL INJURY	IMMUNOFLUORESCENCE MICROSCOPY	HISTOPATHOLOGICAL FEATURE
Post Infectious Glomerulonephritis	Hypocomplementemia Granular deposits of IgG & complement on GBM (lumpy-bumpy) pattern	Diffuse proliferation of glomerular cells and frequent infiltration of leukocytes (especially neutrophils)
Membranous Glomerulonephritis		
Type 1 Membranoproliferative Glomerulonephritis		subendothelial and mesangial deposits
Type2 Membranoproliferative Glomerulonephritis (dense deposit disease)	Excessive complement activation	Characterized by intramembranous dense deposits
IgA Nephropathy	Deposition of IgA & complement C3 in the mesangium	
Type 1 Rapidly Progressive (Cresentic) Glomerulonephritis	linear deposition of IgG and C3 on the GBM	
Type 2 Rapidly Progressive (Cresentic) Glomerulonephritis	granular (lumpy-bumpy) pattern of staining of the GBM	
Type 3 Rapidly Progressive (Cresentic) Glomerulonephritis	lack of anti-GBM antibodies	

RE-SUMMARIZATION:

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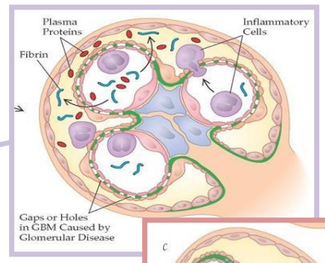
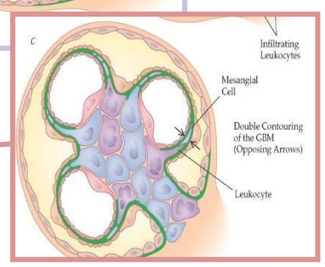
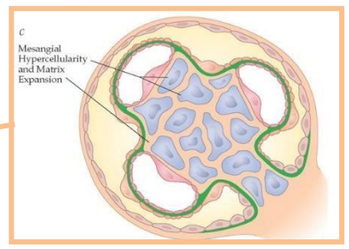
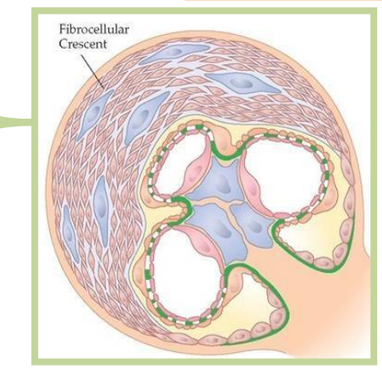
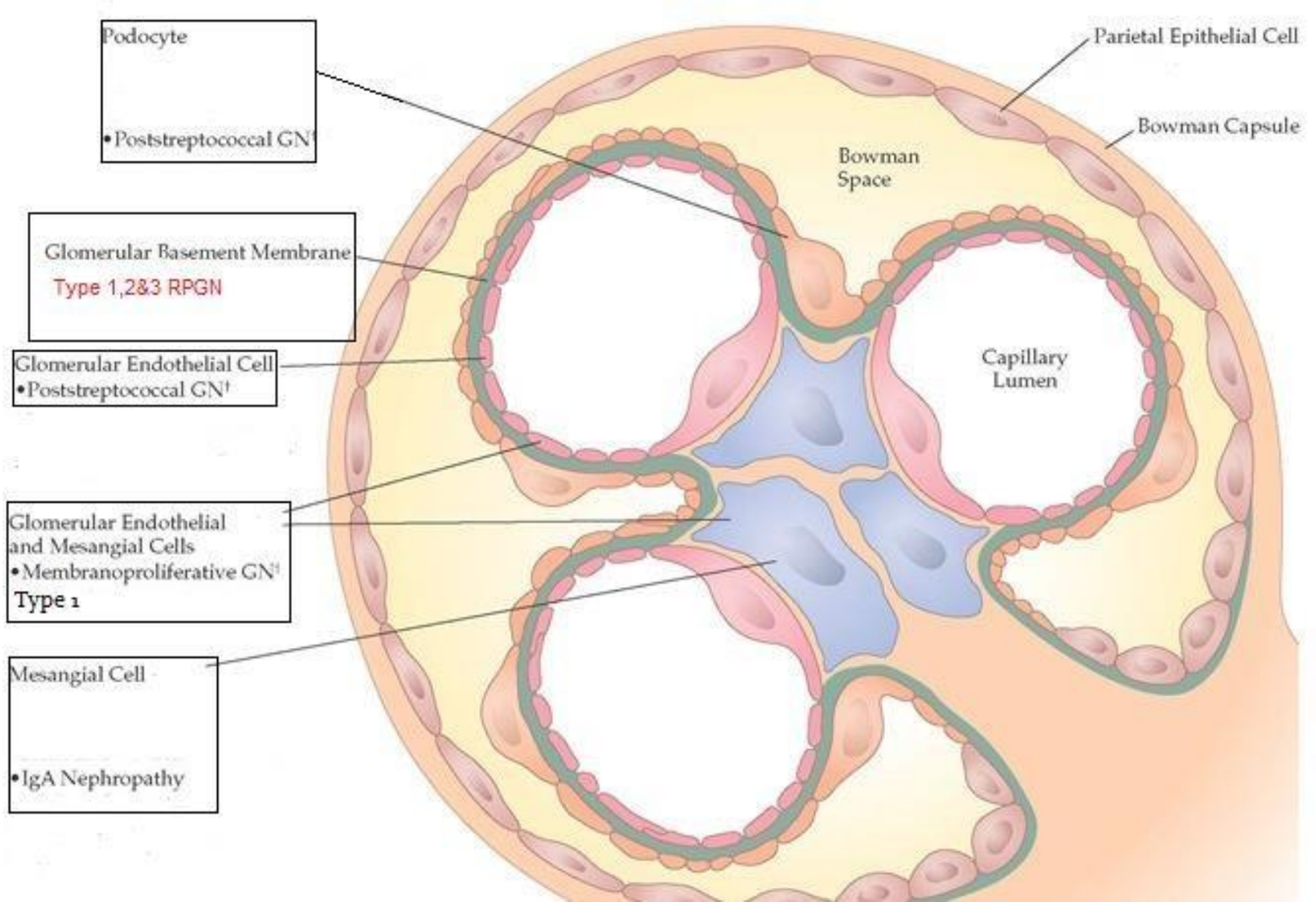
TYPES OF IMMUNE-MEDIATED RENAL INJURY	SITE OF DEPOSITION
Post Infectious Glomerulonephritis	Diffuse (in every whare)
Membranous Glomerulonephritis	
Type 1 Membranoproliferative Glomerulonephritis	subendothelial and mesangial deposits
Type2 Membranoproliferative Glomerulonephritis(densedeposit disease)	intramembranous
IgA Nephropathy	mesangium
Type 1 Rapidly Progressive (Cresentic) Glomerulonephritis	GBM
Type 2 Rapidly Progressive (Cresentic) Glomerulonephritis	GBM
Type 3 Rapidly Progressive (Cresentic) Glomerulonephritis	GBM











1-Which glomerular disease would you suspect most in a patient with the following findings, deposition of IgA & complement C3 in the mesangium with normal serum complement C2:

a) Crescentic glomerulonephritis

b) Post-streptococcal glomerulonephritis

c) IgA nephropathy

d) Antiglomerular basement membrane disease

2-Which glomerular disease would you suspect most in a patient with linear pattern of immune complex deposition:

a) Membranous glomerulonephritis

b) Berger's disease

c) Lupus nephritis

d) Goodpasture syndrome

3- The site of immune complexes deposition in Membranous glomerulonephritis is:

a) Mesangium

b) Basement membrane

c) Basement membrane & mesangium

d) Parietal layer of bowman's capsule

4-Which of the following is a type| (anti-GBM antibody) crescentic GN?

A. Post infection

B. SLE

C. IgA nephropathy

D. Goodpasture syndrome

5-Type ||| crescentic GN is defined by excess of anti-GBM antibodies.

A. T

B. F

6-_____ may occur as a complication of SLE?

A. Type | crescentic GN

B. Type|| crescentic GN

C. Type||| crescentic GN

D. All the above

7-Which of the following may occur with hepatitis B or C?

A- Membranous glomerulonephritis

B- IgA nephropathy

C- Membrano-proliferative glomerulonephritis

D- Crescentic glomerulonephritis

8-Post Infectious Glomerulonephritis occurs 7-14 days after which f the following?

A-Nephritic Syndrome

B-Pharyngitis

C-Skin Infection

9-What is type III Crescentic GN characterized by?

A- ANCA

B- B- SLE

C- IgG & C3