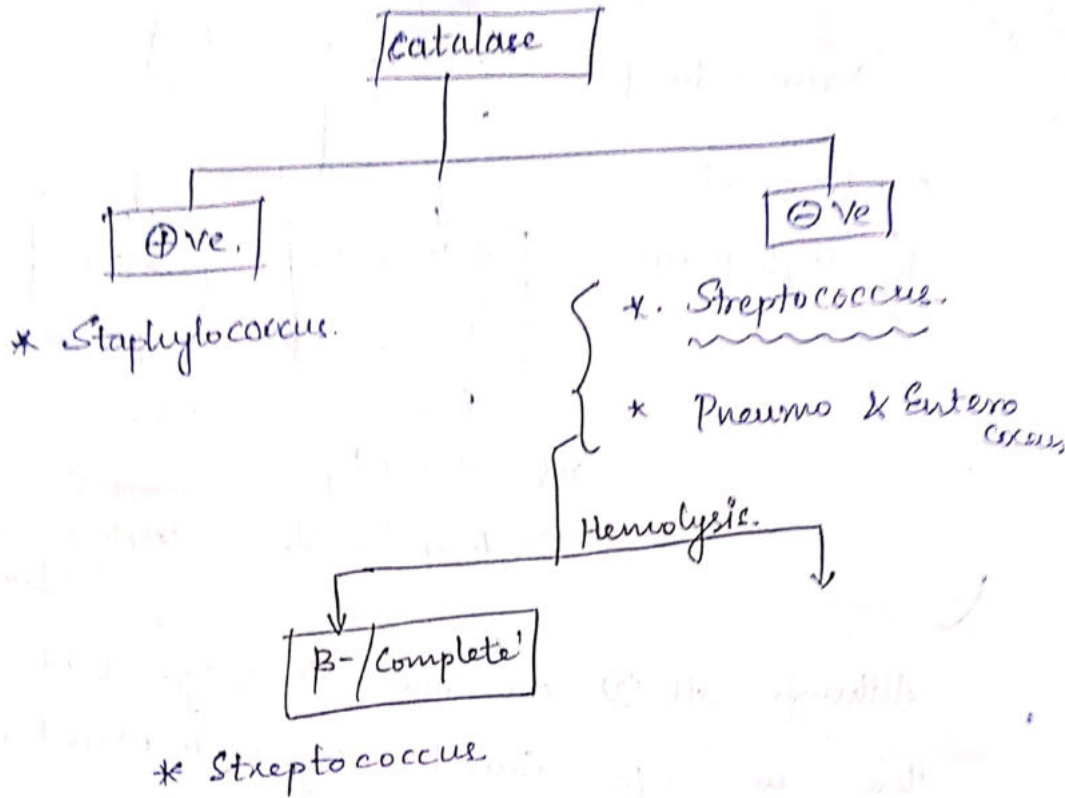
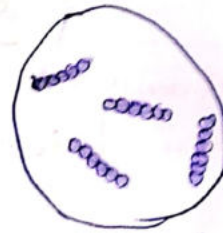




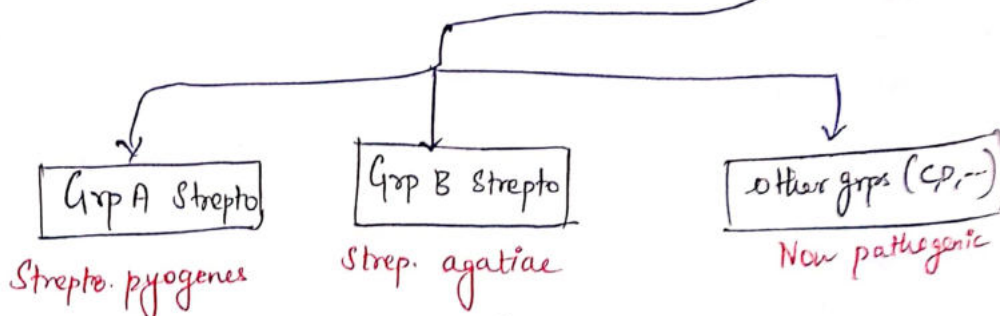
Morphology:

GPC in chains



Species of Streptococcus

* Lancefield classified strepto. - into 20 groups
based on Carbohydrate Ag.



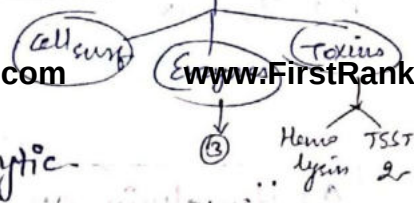
only A & B are Imp. & Pathogenic. www.FirstRanker.com

(i) Cell surface factor:

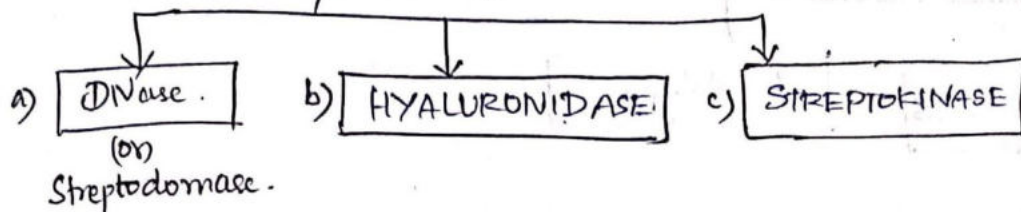
www.FirstRanker.com

www.FirstRanker.com

protein M → Antiphagocytic

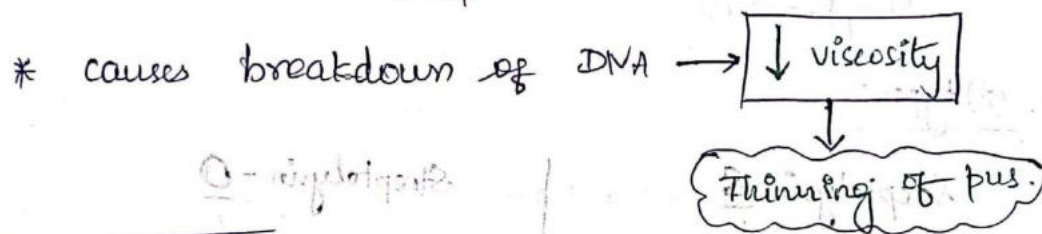


(ii) Enzymes (3)

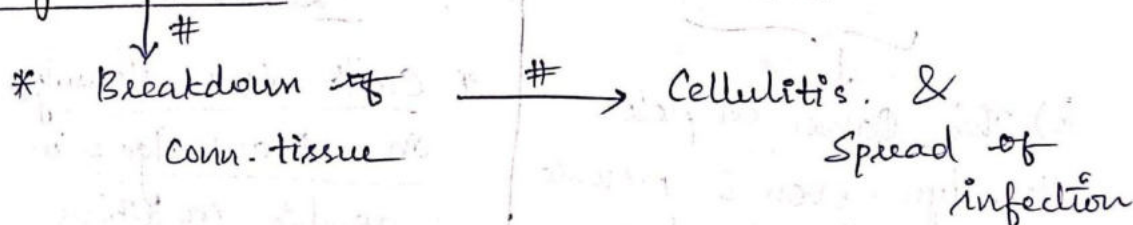


a) DNase / Streptodornase:

* 4 types - A, B, C, D.
 ↳ m/c



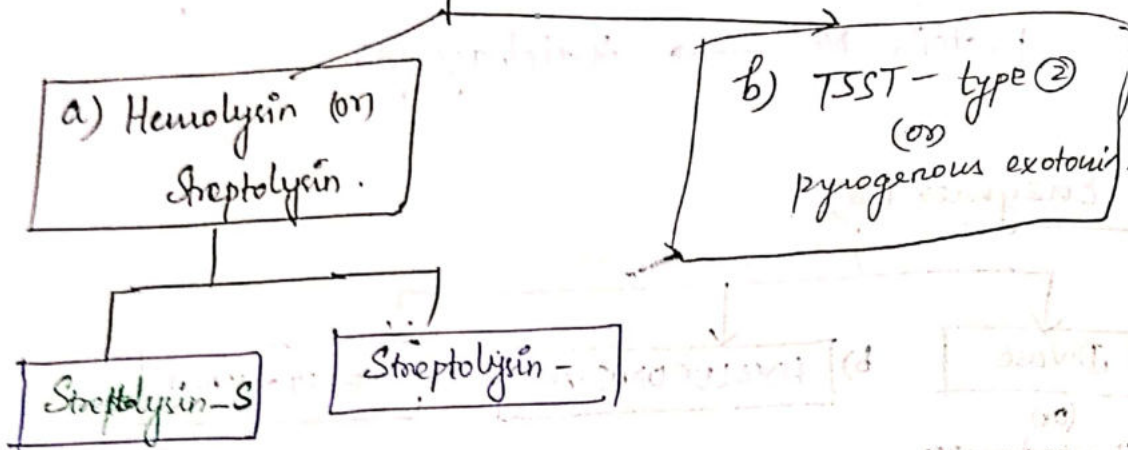
b) Hyaluronidase:



c) Streptokinase:



With the help of Virulence factors, Strepto. Causes Cellulitis, thinning of pus & Spread of infection



a) Hemolysin / Streptolysin:

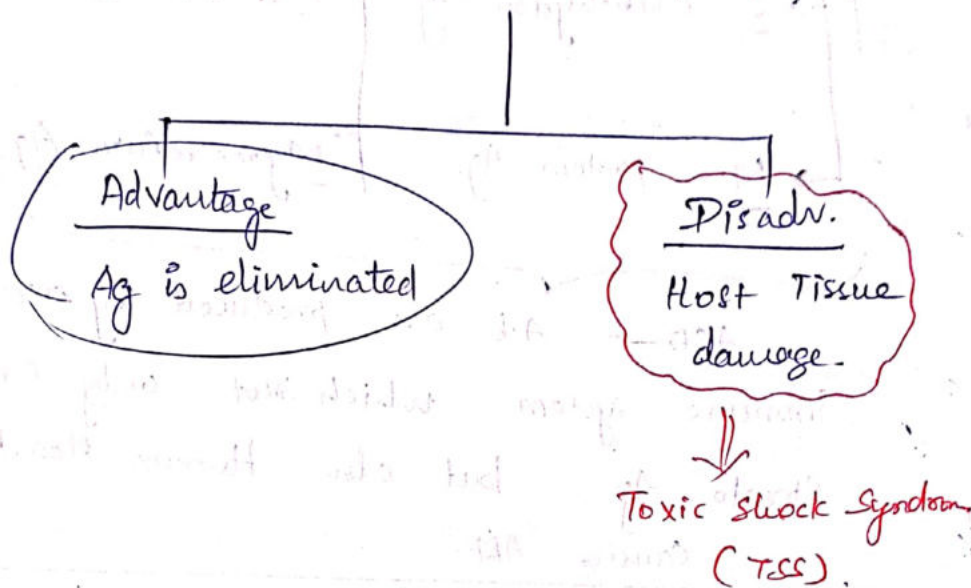
- * Streptococcus $\rightarrow$ β -/complete Hemolysis:
- * Streptolysin is the Hemolysin produced by Streptococcus

* 2 types:

Streptolysin-S	Streptolysin-O
* O_2-stable	* O_2-labile
ie) This Causes Complete Hemolysis even in presence of O_2 in <u>blood agar</u>	* <u>Can't cause Hemolysis on BLOOD Agar</u> in aerobic conditions.
* <u>less immunogenic</u>	* <u>Highly immunogenic</u>
$\downarrow$ few (or) No A.b. are formed	$\downarrow$ product of A.b. Called ASO/ASLO.
$\downarrow$ So diagnosis of Strep. inf. by Streptolysin-S is v. difficult	(ASLO - Anti Streptolysin O Ab.) $\downarrow$ Diagnosis is easy.

* TSST - Toxic Shock Syndrome Toxin.

* Super - Ag $\rightarrow$ Exagg. Immune Response.



CLINICAL MANIFESTATIONS

(or) Diseases caused by Streptococcus.

* m/c caused by β Group - A Streptococcus.
(Strep. pyogenes).

(i) Throat infection (Pharyngitis).

* ASO (Anti Streptolysin - O A.b) are formed. so
Diagnosis of strepto - inf. is made.

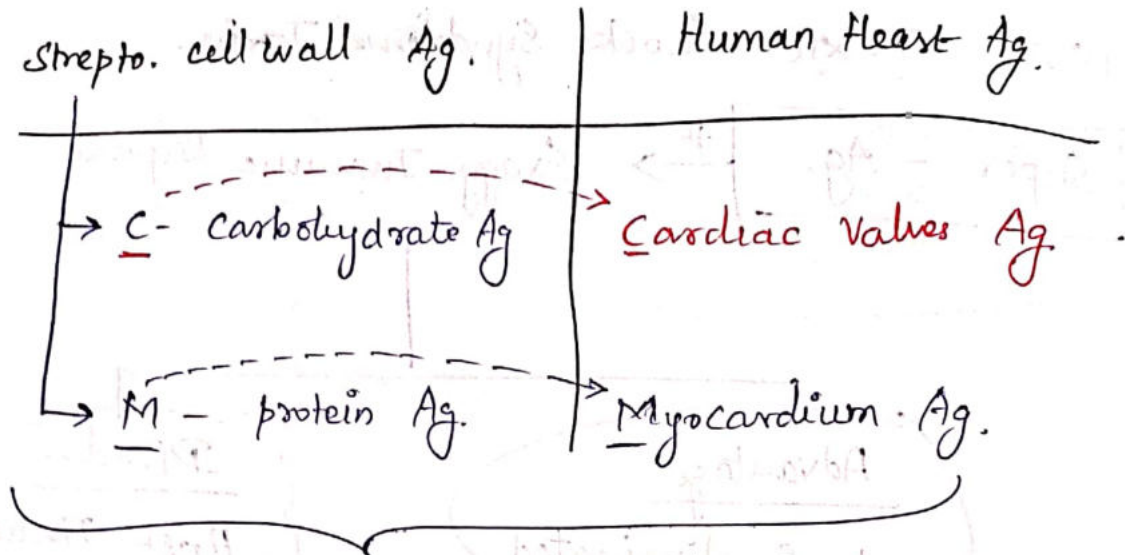
* Complication: Acute RHEUMATIC FEVER (ARF)

* why? Bcoz of ANTIGENIC MIMICRY
B/N CELL WALL ANTIGEN & HUMAN Ag. present
in HEART.

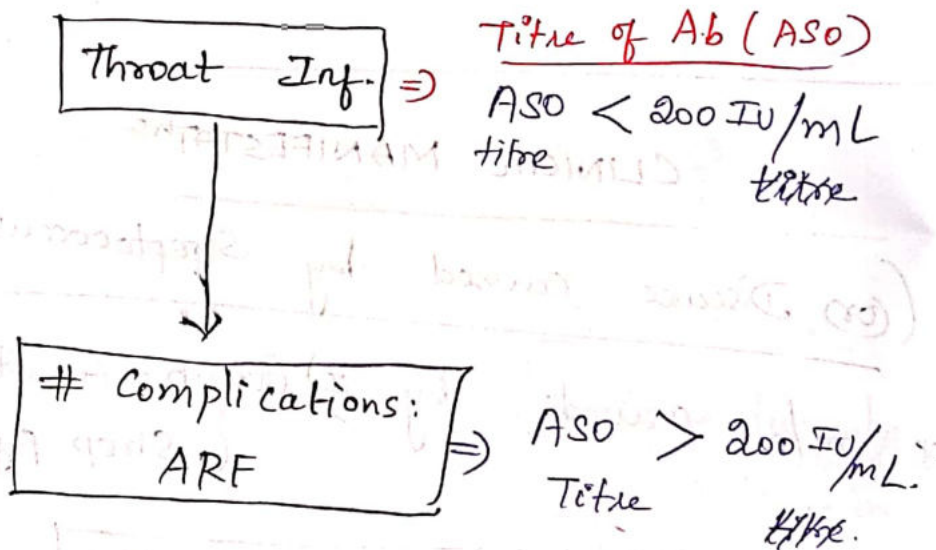
A.b - Antibodies

A.g. - Antigen.

ASO - AntiStreptolysin - O. A.b.



ASO - A.b are produced by our immune system which not only causes Strepto. Ag. but also Human Heart Ag. causing "ARF"



By ASO Titre we can conclude whether the pt. suffers only from Throat inf (or) (Throat inf. ⊕ ARF)

* pus forming

more no. of DNase / Hyaluronidase are formed

A.b against it are also formed & that's why Anti DNase - B is used to detect Strepto. skin inf. / pyoderma.

Complications: PSGN : (Post Streptococcal Glomerulo Nephritis)

same reason: Ag MIMICRY.

Cell memb Ag. (Strepto - Ag.) $\xrightarrow{\text{mimics.}}$ Glomerular Vascular Inner Memb. Ag. (Human Ag.)

But our A.b attack both ---- That's why ... Complications.

By performing Anti DNase B titre we can conclude whether the pt. suffers from pyoderma (or) along with complicatn.

Pyoderma alone Pyoderma + PSGN.

Anti DNase - B titre < 300 IU/mL

Anti DNase - B titre > 300 IU/mL

↓ m/c cause of
Neonatal meningitis.

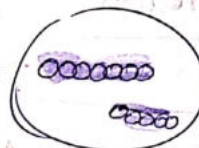
Note: Now-a-days many articles mention that *Listeria* is the m/c cause of Neonatal meningitis.

Δ^{is} [Diagnosis]:

(i) Microscopy:

Gram stain = Violet

Arrangement - chain.



(ii) Culture:

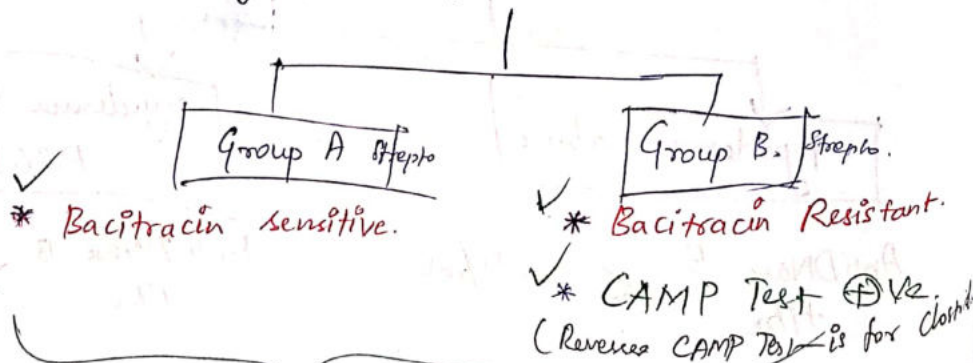
Selective media:

* In "Crystal Violet Blood Agar" only Strepto- will grow.

(iii) ID (Biochem Test)

* Catalase → ⊖ve.

* Hemolysis → β-/complete



Tests to Differentiate b/w Grp A & B.