

S. aureus

- Beta hemolytic
- **Coagulase (+)**
- Yellow colonies in blood agar (Catalase +)
- **FIRST CAUSE OF GI INTOXICATIONS IN THE U.S (TOXIN=HEAT STABLE)**
- Diseases:

- **TOXIC SHOCK SYNDROME:** HIGH YIELD

TOXIN: **TSST-1**: Act like a Superantigen (Overactivate Immune System)
Clinica: Fever, *scarlatin rash or sunburn that desquamates palms and soles*.

Associated with Tampons and wound packing.

Questions: Woman who recently had menstruation.

- **GASTROENTERITIS:** 2-6 HOURS AFTER INGESTING TOXIN

TOXIN: **ENTEROTOXIN A-E (Heat Stable) Self-limiting**

Clinica: Nausea, abdominal pain, vomiting and diarrhea.

Foods: **Potato salad, Pastries, Custard, Canned meats.**

- **INFECTIVE ENDOCARDITIS**
- **PNEUMONIA:** *Salmon color sputum*, high rate of necrosis and fatality.
- **IMPETIGO:** *Erythematous papules to bullae*.
 - Use Catalase to differentiate between Staph or Strep agent.
- **OSTEOMYELITIS:** Bone pain and fever (Staph, Most common cause)
- **SCALDED SKIN SYNDROME:** Diffuse epidermal peeling. Toxin: Skin Exfoliating Toxin (SSS)

Staphylococcus

-Predisposing Factors:

- Surgery/Wounds
- Foreign Body (Tampon, packing, suture)
- IV Drug abuse
- **CGD:** Chronic Granulomatous disease
- Cystic Fibrosis

-Treatment:

- Gastroenteritis: Self Limiting
- Nafcillin/Oxacillin: Drug of choice for widespread ATB resistance.
- **MRSA:** Vancomycin **VRSA or VISA** : quinupristin/ dalbapristin.

S. epidermidis:

- Coagulase (-) / Novobycin Sensitive
- Infections of **Catheters and prosthetic devices/Shunts**
- Endocarditis in IV Drug users
- Biofilm producer.

S. saprophyticus:

- Coagulase (-) / Novobycin resistant
- **"Honeymoon Cystitis"**
- Questions: Young female, sexually active, signs of UTI.

Group A

S. pyogenes

- Beta hemolytic
- Bacitracin sensitive
- PYR (+) . Sirve para diferenciar del Grupo B
- Pathogenesis:
 - M protein: antiphagocytic
 - M12 associated with acute glomerulonephritis
- Spreading Factors:
 - Exotoxins A-C
- Diseases:

- **SCARLET FEVER:** HIGH YIELD

"Sandpaper Rash" and **"Strawberry Tongue"**, Blanching

- PHARYNGITIS
- IMPETIGO/PIODERMA : *Honey Crusted Lesion*
- CELULITIS/**NECROTIZING FASCITIS**
- Sequelae: **HIGH YIELD**

RHEUMATIC FEVER: Antibodies to heart tissue. **Type II**

Hypersensitivity. I ASO Titers

GLOMERULONEPHRITIS: M12 Serotype. **Type III Hypersensitivity.**

Smoky Urine.

- Dx: Rapid Strep Test: ELISA
 - Streptolysin O (ASO): Titer > 200 Rheumatic Fever.
- **Treatment:**
 - Beta lactam drug
 - Macrolides (Penicillin allergies)

Streptococcus

- Cocci in chains
- Catalase (-) Test de elección para diferenciar de Staph

S. agalactiae:

Group B

- Beta hemolytic
- Bacitracin resistant/ Hydrolyze hippurate
- Reservoir: Human Vagina 15-20%
- Pathogenesis: Capsule/B hemolysin and cAMP factor(Test)
- Disease: **NEONATAL MENINGITIS AND SEPTICEMIA**
- Treatment: Ampicillin w/ aminoglycoside or cephalosporin.

S. pneumoniae

- Alfa hemolytic
- Optochin sensitive / Lancet shaped
- Reservoir: Human respiratory tract.
- Predisposing factors:
 - Measles or Influenza
 - Alcoholism
 - Asplenia / CHF/ COPD
- Diseases: **HIGH YIELD**

TYPICAL PNEUMONIA : Rusty Sputum. **Treatment:** Macrolides

ADULT MENINGITIS: Ceftriaxone/ Cefotaxime or Macrolides

OTITIS MEDIA-SINUSITIS (CHILDREN): Amoxicillin

Pneumococcus produces a lobar pneumonia w/ productive cough.

VACCINE: POLISACCHARIDES .

ADULTS: PPV >65Y CHILDREN: PCV