

UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ

FACULTAD DE CIENCIAS QUÍMICAS

Laboratorio de Microbiología

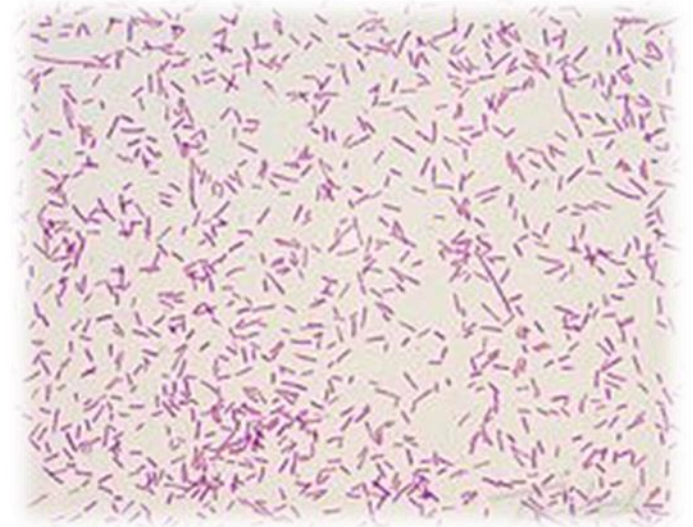
Enterobacter aerogenes

Student: Castillo Guevara Diana Zuzim

Maestras: Q.F.B. Juana Tovar Oviedo

Rosa Elvia Noyola Medina

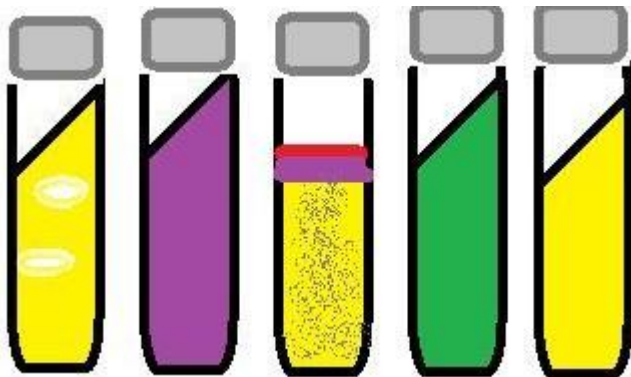
Group: 08:00-09:00



Objectives



- Apply biochemical tests for the correct identification of a microorganism causing *septicemia* in a patient of 11 days of life.
- To perform antimicrobial susceptibility tests applied to the microorganism previously identified in the biochemical tests, in order to know the antibiotics that can be administered and that can inhibit the growth of this one in an effective way.



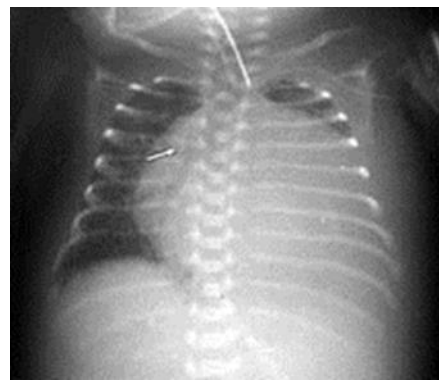
Introduction

- Microorganism belonging to the genus *Enterobacter*, from the family Enterobacteriaceae.
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- It is a Gram-negative bacillus, facultative anaerobic.
- It causes a high range of pathologies, including bacteremia, osteomyelitis, and septic arthritis, as well as infections of the urinary tract, gastrointestinal, respiratory tract and skin.
- It causes pathology after its guest has already been weakened, and commonly resides in hospitals.



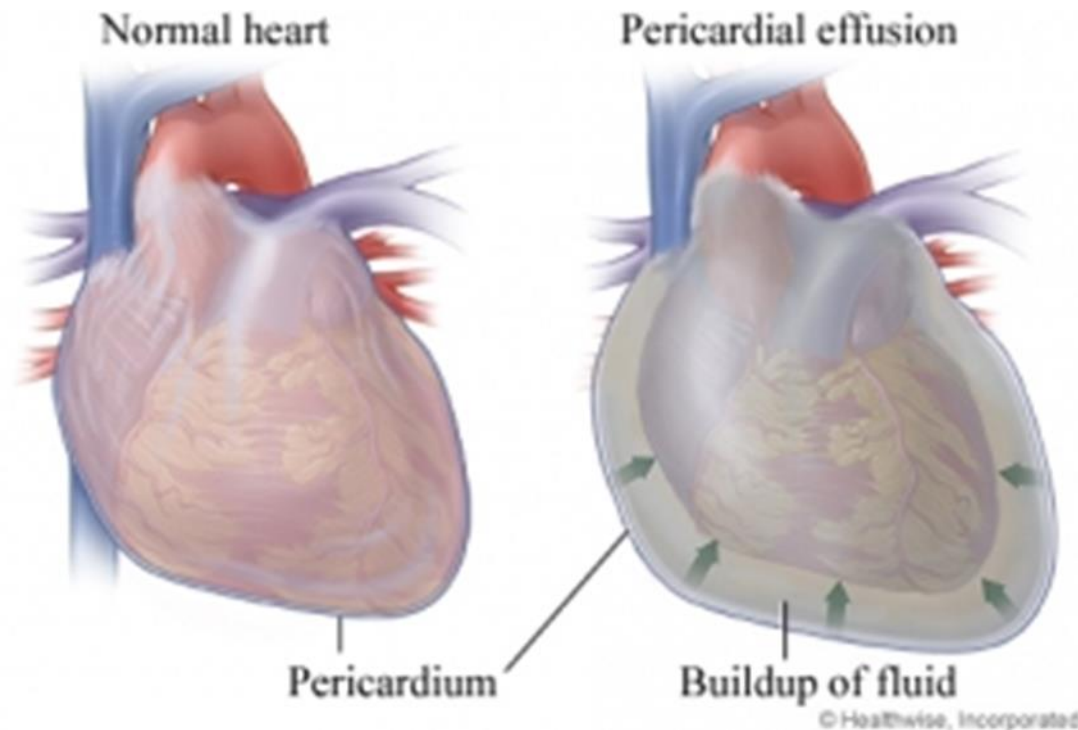
CLINICAL CASE

- It is a newborn, female, 11 days old, premature first twin of 25 weeks, 650 grams at birth. She was born by emergency cesarean section due to premature labor.
- It evolved with severe hyaline membrane disease requiring two doses of surfactant.
- A percutaneous venous catheter was placed through the upper left limb at 8 days of life, after which an x-ray was obtained.
- **She developed septicemia by multi-resistant *Enterobacter aerogenes* and received treatment from 9 days of life.**



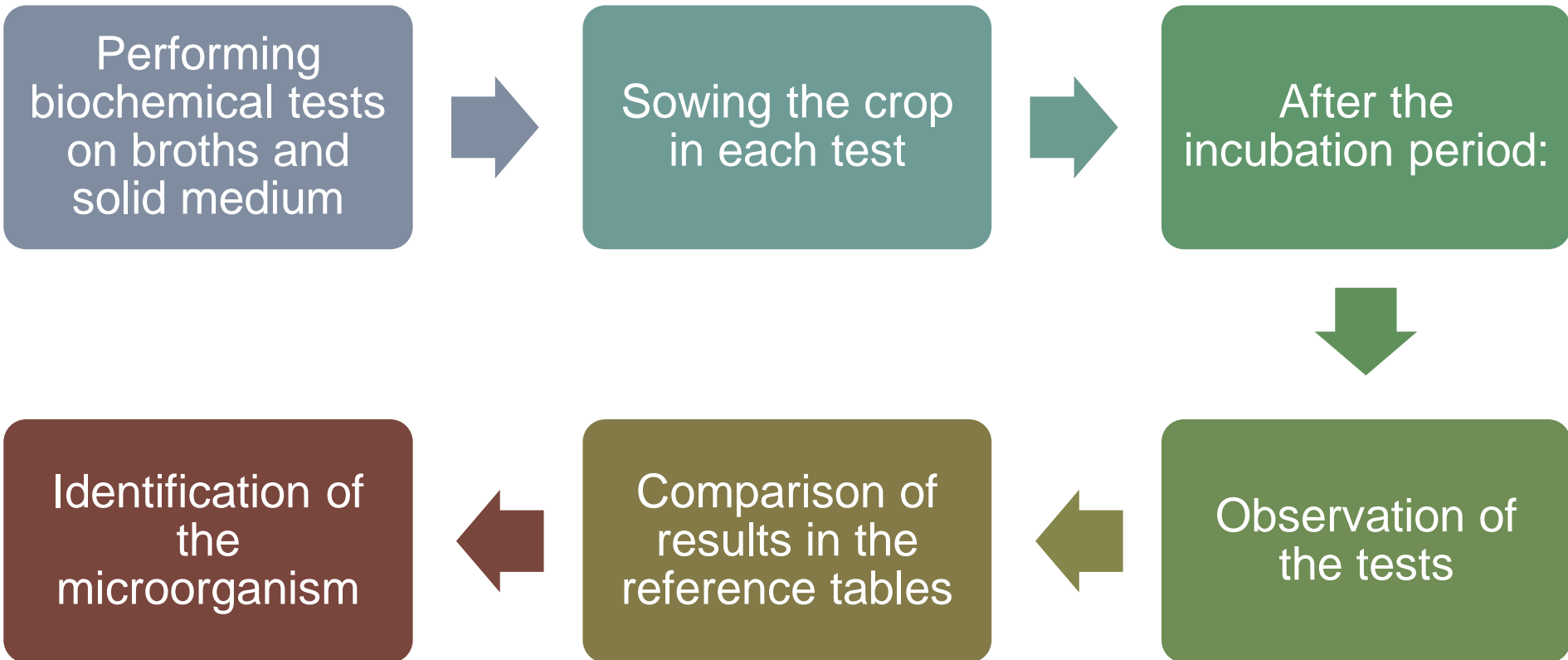
- **DIAGNOSTIC**

- Pericardial effusion, with cardiac tamponade secondary to central venous catheter atrial perforation.

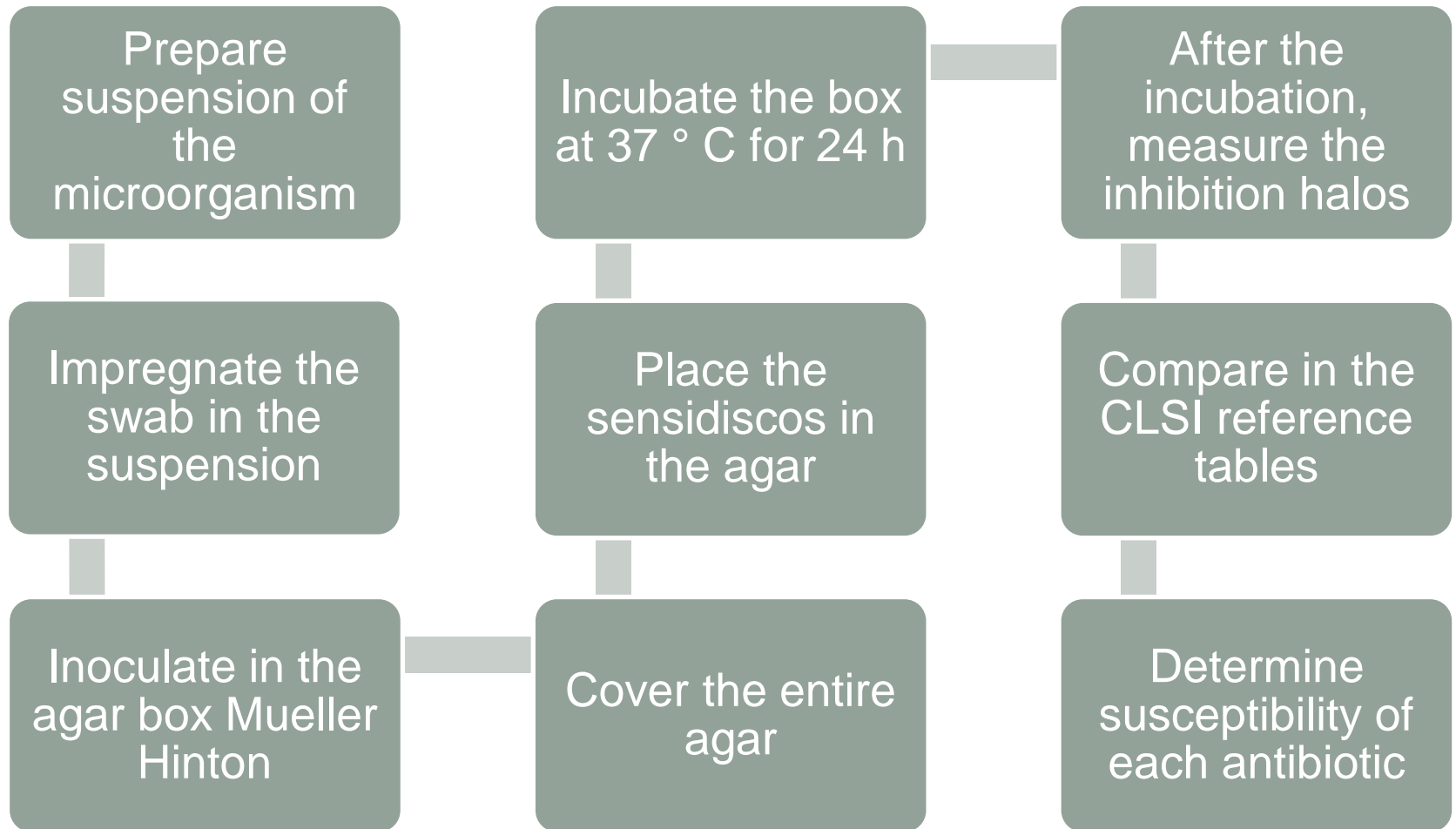


Methodology

Biochemical tests:



Susceptibility testing



Results

Biochemical tests



Citrato of
Simmons
(-)
It should
have been
(+)

FEA (-)

UREA (-)

METHYL
RED (+)

SIM (-)



LIA (-)
It should
have
been(+)

KLIGER
Glucosa (+)
Lactosa (+)
Gas (+)

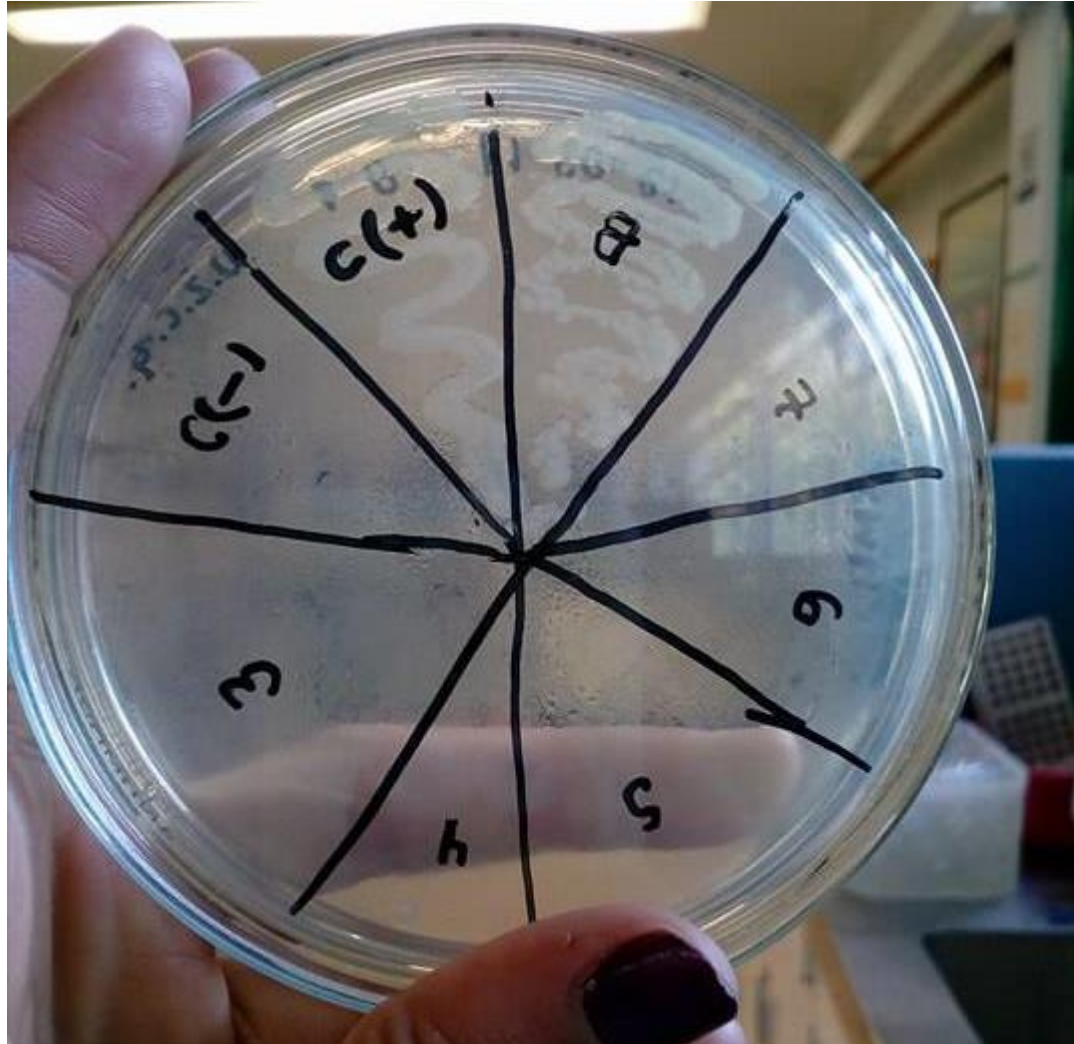
MIO
(-)

MALONAT
E (+)

Voges
Proskauer
(-)
It should have
been (+)

Antibióticos

CMI y CMB:



Técnica de Kirby-Bauer:



Results

	Name	Resistant (mm)	Intermediate (mm)	Susceptible (mm)	Results (mm)	
AM 10	Ampicillin	≤ 13	14-16	≥ 17	15	Intermediate
CRO	Ceftriaxone	≤ 13	14-20	≥ 21	35	Susceptible
CIP	Ciprofloxacin	< 15	16-20	≥ 21	17	Intermediate
SXT	Trimethopim-sulfamethoxazole	≤ 16	11-15	≥ 16	25	Susceptible
NA 30	Nalidixic acid	≤ 13	14-18	≥ 19	-	Resistant

Discussion of results

- Biochemical Tests

- According to the biochemical tests performed on the sample taken from the patient, we deduce that it was definitely *Enterobacter aerogenes* since the majority of the results of the tests performed coincide with those consulted in the bibliographies.

- Antibiotics

- Once the microorganism responsible for septicemia has been identified with certainty, it performs susceptibility tests in order to assign an antibiotic to the patient and obtain a beneficial result.
- According to the results, *Enterobacter aerogenes* is susceptible to Ampicillin and Trimethoprim-Sulfamethoxazole, intermediate for ceftriaxone and ciprofloxacin, and resistant to Nalidixic acid 30.
- So that it can safely prescribe AM 10 and SXT, with certain CRO and CIP observation and deny Supplying NA 30

Conclusions

- Based on the results, we were able to identify the microorganism causing septicemia in a patient of 11 days of life, as well as we could perform the susceptibility tests of this microorganism to know the antibiotics that could inhibit the growth of *Enterobacter aerogenes*.



Bibliography:

- Cuellar, Y. R. (16 de Abril de 2013). *Microbiología y Parasitología* . Recovered at March 17th 2017, Enterobacter aerogenes: <http://microbiologia2a.blogspot.mx/2013/04/enterobacter-aerogenes.html>
- León del Pedregal , J., Fuenzalida I. , J., Fuentes L. Cristian , & León F. , F. (2006). Caso clínico radiológico . *Revista Chilena de pediatría*.
- http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0370-41062006000300008