



AUTONOMOUS UNIVERSITY OF SAN LUIS POTOSÍ



FACULTY OF CHEMICAL SCIENCES

MICROBIOLOGY LABORATORY

CLINICAL CASE: *Serratia marcescens*

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Group 8:00-9:00

Objective

- Investigate a clinical case of **Serratia marcescens** and based on our knowledge acquired in the Microbiology laboratory carry out the tests of its identification and treatment.

Serratia marcescens

- Gram negative bacillus
- Family **Enterobacteriaceae**
- It is a major cause of infections of nosocomial origin (infections acquired within the hospital)
- Bathrooms and sewers

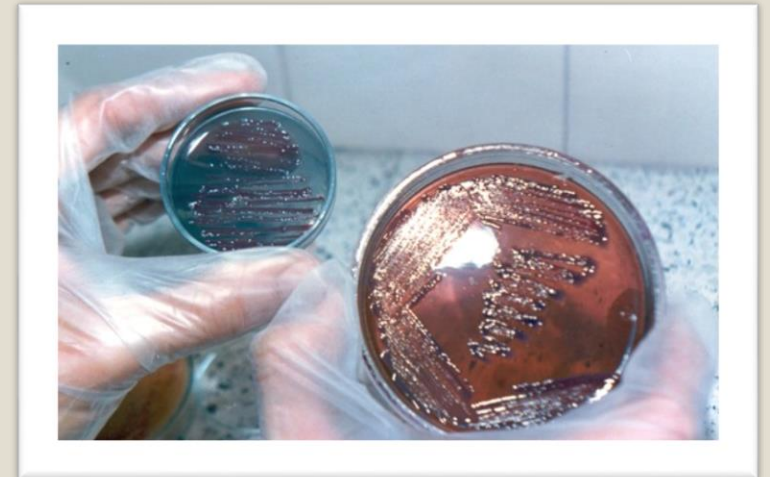


Clinical Case

- Women
- Diagnosticated with **tuberculosis** since a year ago.
- Receives treatment in a discontinuous way **during 9 months**
- After 30 days without treatment, she goes with the doctor cause she have the next symptoms:
 - Cough
 - Hemoptotic Expectoration.
(Phlegm with blood)
 - Intermittent fever
 - Tachycardia
 - Hypotensive

The treatment based on the culture and antibiogram was with **ciprofloxacin** 1500 mgr / day .. After the treatment the patient evolved favorably.

Urine culture: **negative**.
Culture for alcohol resistant Bacilli: **negative**.
Culture of sputum: **Serratia marcescens** as sole flora.



http://med.unne.edu.ar/revista/revista147/4_147.htm

Methodology

- A Gram staining was performed for the identification of the microorganism
- The inoculation and sowing of the biochemical tests
- The respective tests were interpreted based on the tables.
- The Kirby-Bauer method was performed



Results

Gram Staining: **Bacile gram negative**

Biochemistry Tests:

Cuadro III. Determinación del biogrupo I de <i>S. marcescens</i> (79 cepas probadas).			
Prueba bioquímica	Resultado	Prueba bioquímica	Resultado
Rojo de metilo	+	Citrato	+
Voges-Proskauer	-	Malonato	-
Lisina descarboxilasa	+	Adonitol	-
Arginina dihidrolasa	-	Myo-inositol	+
Ornitina descarboxilasa	+	D-sorbitol	+

CIMMONS CITRATE: POSITIVE
FEA: **NEGATIVE**
UREA: POSITIVE (variable)
RM: NEGATIVE (variable)
SIM: POSITIVE
LIA: POSITIVE
KLIGER: -----
MIO: POSITIVE
MALONATE: **NEGATIVE**
VOGES PROSKAUER: POSITIVE
INDOL: NEGATIVE

<http://www.medigraphic.com/pdfs/patol/pt-1999/pt994f.pdf>

Antimicrobial Susceptibility Tests

Resistant:

- SAM20 → AMPICILLIN
- FM100 → NITROFURANTOIN

Sentient:

- AN30 → AMIKACIN
- IPM10 → IMIPENEM
- CAZ30 → CEFTAZIDIME



Conclusion

- The patient having a previous diagnosis of tuberculosis is immunocompromised, and this condition is exploited by *Serratia marcescens*, since it is an opportunistic bacterium. It is an infection since the patient has intermittent fever and thanks to the respective tests, it was possible to identify the microorganism and suppose a possible treatment against the infection caused by *serratia marcescens*.



Bibliography:

- http://med.unne.edu.ar/revista/revista147/4_147.htm
- <http://www.medigraphic.com/pdfs/patol/pt-1999/pt994f.pdf>
- <http://www.clinicarotger.es/doc/gacmic/gacmic04.pdf>
- Clinical and Laboratory Standards Institute. M100 Performance Standards for Antimicrobial susceptibility Testing; Twenty-Fifth Informational Supplement. Vol. 35. N°3: 2015