

Universidad Autónoma de San
Luis Potosí
Facultad de Ciencias Químicas

**General
Microbiology
Laboratory**

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Oscar de Jesus Ponce Rivera

Group:
9:00-10:00

March 21, 2017

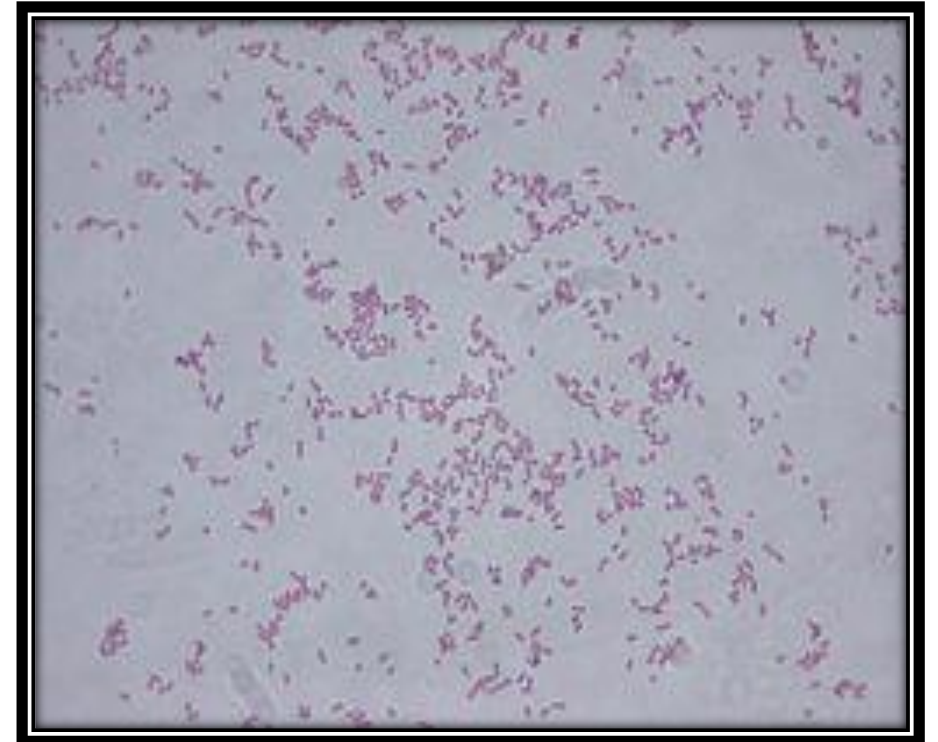


Clinical case

Endocarditis by
Klebsiella oxytoca

OBJECTIVE

- * Demonstrate the biochemical tests that the bacterium is subjected to for identification.
- * Know the antibiotics to which the microorganism is susceptible.
- * Analyze a clinical case in which the bacteria take effect and know the treatment.



Introduction

This is a 33 year old man who enter for a feverish syndrome without focal. For 2 months it has peaks occasional fever of 38 ° C autolimitan, and in the last 3 weeks feverish peaks of 40 ° C with onset progressive dyspnea of great efforts and edemas inlower extremities.

Pathological antecedents

Hepatitis C virus and an infection by the immunodeficiency virus (HIV) in treatment antiretroviral with stavudine, nevirapine and nelfinavir (CD4 lymphocytes 326 μ l / mm³)

EXPLORATIONS

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graph TD; A[EXPLORATIONS] --> B[Physical]; A --> C[Analytics]; B --> D[He has a fever of 38.5 ° C and a systolic murmur in the pulmonary focus, a hepatomegaly of 3 finger traverses and ankle edema stands out in the cardiac auscultation, the rest of the examination being normal, without stigmas of endocarditis.]; C --> E[Leukocytes 22,800 / mm3, with an ESR of 16 mm and in biochemistry total bilirubin 3.7; FA 524 and GGT 108, the remainder being normal determinations.];
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Physical

He has a fever of 38.5 ° C and a systolic murmur in the pulmonary focus, a hepatomegaly of 3 finger traverses and ankle edema stands out in the cardiac auscultation, the rest of the examination being normal, without stigmas of endocarditis.

Analytics

Leukocytes
22,800 / mm³, with an ESR of 16 mm and in biochemistry total bilirubin 3.7; FA 524 and GGT 108, the remainder being normal determinations.

Chest x-ray does not show images of infiltrates and ultrasound abdominal hepatosplenomegaly, with normality in kidneys and urinary tract. The electrocardiogram shows a sinus rhythm with image of right ventricle growth.



A transthoracic echocardiogram was performed in which a slightly fibrous pulmonary bioprosthesis with a 10x15 mm moving image and a minimal degree of insufficiency was observed. The right ventricle is dilated with depression of systolic function and left ventricular ejection fraction of 65%.

Methodology

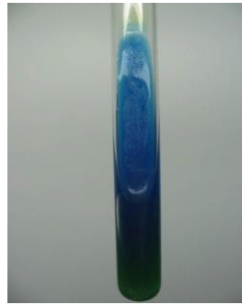
Three blood cultures gave results positive isolates of *K. oxytoca*.



Sputum cultures and urine culture are negative, as are smear microscopy and sputum cultures for mycobacteria.

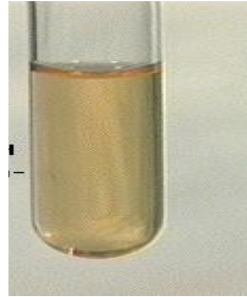
Biochemical Tests

ID



Positive

Simmons Citrate

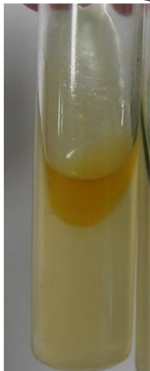


Urease

Negative

Indole

Positive

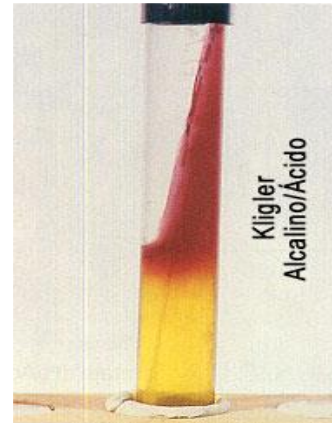


Negative

FEA

Krigler

**Positive for
Glucose**

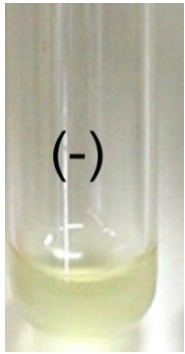


Krigler
Alcalino/Acido

Positive

Vogues-Proskauer



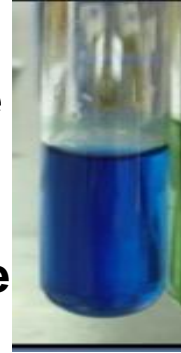


Methyl red

Negative

Malonate

Positive



Positive

LIA



Jelly (22°C) Negative

Treatment

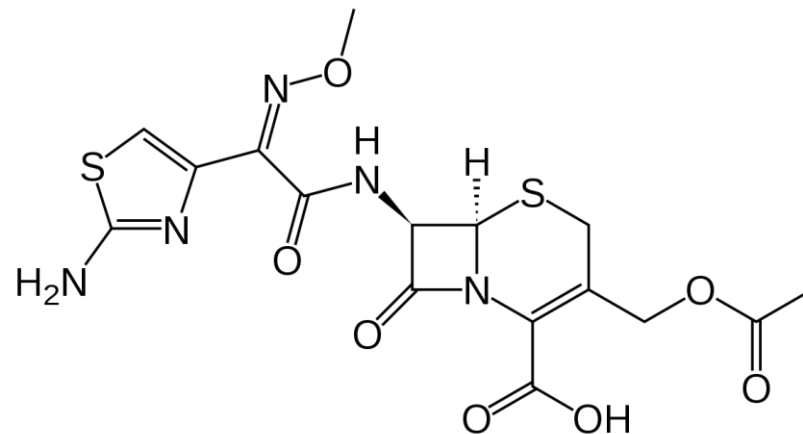
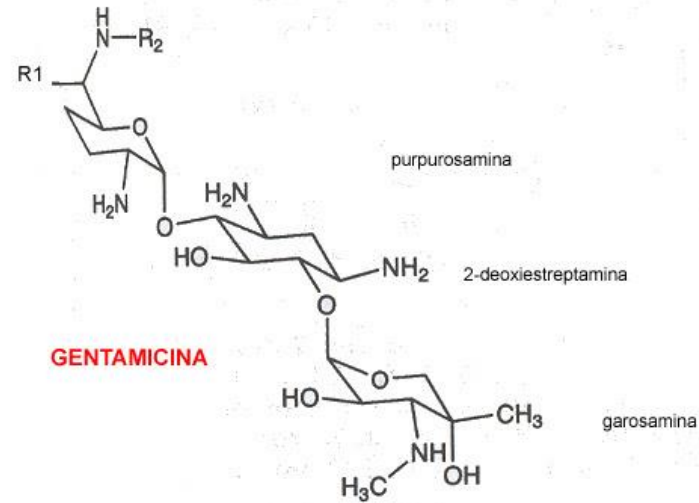
Susceptible antibiotics

- **Cephalosporins**
- **Carbapenem**
- **Aminoglycosides**
- **Quinolones**

With the diagnosis of IE (applying the criteria of Durack) treatment is put with cefotaxime and gentamicin, associating diuretics during the first days.

Mechanism of Action of Gentamicin

Its mechanism of action is to interfere in the normal synthesis of proteins, originating non-functional proteins in susceptible microorganisms, the aminoglycosides irreversibly bind to the 30S subunit of the bacterial ribosome.



Mechanism of Action of Cefotaxime.

They interfere in the synthesis of peptidoglycan of the bacterial cell wall, and inhibiting the final transpeptidación, necessary for the cross-linking. This generates a bacteriolytic effect

CONCLUSIONS

After finishing the the blood cultures were repeated which gave negative results and the patient remains asymptomatic in a new revision to the 3 months, keeping the echocardiogram control ventricular function, with disappearance of the wart and without an increase in valvular dysfunction.

The patient progresses favorably with disappearance of symptoms of heart failure and fever within 7 days of admission, completing antibiotic treatment for 6 weeks.

Bibliography

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2. Anderson M, Janoff E. *Klebsiella* endocarditis: Report of two cases and review. Clin Infect Dis 1998; 26: 468-474.

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