Blood culture: bacterial infections of newborns admitted to maternity

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Introduction

In neonatology, the diagnosis of infection is based on a set of clinical, biological, radiological and microbiological criteria. Blood culture is the test of choice for a diagnosis of certainty.
The purpose of our work: To evaluate the bacteriological profile of Blood culture of newborns from the Ibn Tofail maternity department.

Patients and methods

- Retrospective study
- Records of hospitalized patients; whose origin was the hospital maternity IBN TOFAIL MARRAKESH.
- Total number of patients: 126 patients
- Period of the study: from June 2016 to November 2016.

Results

- Total number of patients: 126 patients
- Birth weight: between 900g and 5.6kg
- Number of patients with positive blood cultures: 40 patients
- The positivity rate was: 34.1%
- Sex of patients with positive blood cultures: 62% female and 38% male
- The microorganisms involved and the bacteriological profile were detailed in Table 1.
- The most recovered germ is coagulase negative Staphylococcus: 48.8%.
- The other germs found were resistant to the probabilistic antibiotherapy used in the neonatal intensive care unit (3rd generation cephalosporin associated with Gentamicin).
- The antibiotic used: Imipenem associated with Amikacin.
- Colistin is used in the case of Acinetobacter Baumannii.
- The good evolution patients with positive blood cultures: 49%
- The mortality rate in patients with positive blood culture: 51%

Discussion

- Blood culture is a reliable diagnostic tool for bacterial infection
- Contamination is not uncommon and reduces the specificity of blood cultures. The scientific literature reports contamination rates as high as 50% of all positive blood cultures [1].
- Contamination is most often due to interpretation guidelines. The arguments indicating rather a contamination are the demonstration in a single blood culture, the isolation of different coagulase negative Staphylococcus (CNOS) or morphotypes with different resistances [2]
- The high prevalence of S. coagulase negative infections, which is consistent with the data from the literature (Table 2) [3]
- Our study revealed the presence of bacteremia with mutilated germs, which should make it possible to discuss the nosocomial infection, in case of compatible clinical picture.

Conclusion

- New technologies promise a revolution in the diagnosis of bacteremia in the coming years.
- Biomolecular methods will enable automated, fast and reliable identification
- Due to the high costs that can be expected with these technologies, more precise indication and prevention of contamination are essential.

Microorganisms	Number	Percentage	Sensitivity	Cure rate
Coagulase negative Staphylococcus (CNOS)	21	48.8%	C3G+gentamicin	78%
Klebsiella.P	5	11.6%	Imipinem +Amikacin	40%
Acinetobacter.B	4	9.3%	Colistin	75%
Serratia.M	3	6.9%	Imipinem +Amikacin	33.3%
Burkholderia.C	1	2.3%	Imipinem +Amikacin	0%
Bacillus.SPP	3	6.9%	Imipinem +Amikacin	100%
coccobacillus	2	4.65%	Imipinem +Amikacin	100%
Achromobacter	1	2.3%	Imipinem +Amikacin	100%
Corynbact.SPP	1	2.3%	Imipinem +Amikacin	0%
Vibrio Cholera	1	2.3%	Imipinem +Amikacin	0%
E.Coli	1	2.3%	Imipinem +Amikacin	100%

Table1: the distribution of microorganisms

Figure 1: the distribution of blood cultures according to the months

Pathogen	No. (%)
Coagulase-negative Staphylococcus	102 (50.5)
Staphylococcus aureus	19 (9.4)
Candida albicans	14 (6.9)
Escherichia coli	13 (6.4)
Klebsiella sp.	12 (5.9)
Enterococcus faecalis	9 (4.5)
Other gram positive	9 (4.5)
Enterococcus sp.	7 (3.5)
Enterobacter sp.	5 (2.4)
Candida sp.	4 (2.0)
Other gram negative	4 (2.0)
Bacillus sp.	2 (1.0)
Group B Streptococcus	1 (0.5)
Pseudomonas aeruginosa	1 (0.5)

Table2: Prospective study 7 NICU between 2007 and 2011

References

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