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2004 2003 2002

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%43.5

%48.7

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## Neonatal Sepsis in Children Hospital of Damascus University

Jehad KAZAH \*

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### Abstract

Neonatal sepsis is the most common cause of morbidity and mortality in the newborn. The causative bacteria and its resistance differ from place to other and from time to time.

A retrospective study over 3 years was conducted in NICU of Damascus university to explain any change in the bacteriological profile of neonatal sepsis and to prove the need to change the treatment policy. This study was carried out on the neonates admitted on NICU between 1/1/02 and 31/12/2004 who had the diagnosis of sepsis. We had the results of blood culture and the resistance report from the patients files and the archive of our bacteriological laboratory. we compared the results with chi square.

The incidence of clinical sepsis was 43.5% with 20.26% positive blood culture. The mortality rate was 37.15% and 48.7% in proven sepsis. Gram negative bacteria ( Klebsiella, Burkholderia, Enterobacter) were the most common causes of sepsis. Gram negative bacteria had increased resistance to 3ed generation cephalosporins. Klebsiella had high resistance to antibiotics except imipenem and ciprofloxacin. We found an increase in the neonatal sepsis caused by gram positive bacteria.

Incidence and mortality of neonatal sepsis in our unit is higher than other countries. In our unit as in other developing countries the gram negative bacteria is the most common causes of neonatal sepsis. Gram negative bacteria especially Klebsiella had higher resistance to antibiotics than that reported in other studies. We recommend the excluding of the cephalosporins from the initial therapy of the neonatal sepsis. We emphasize that amikacin + amoxicillin/clavulanic acid should be considered for the initial therapy of neonatal sepsis and imipenem or ciprofloxacin + teicoplanin or vancomycin for the nosocomial sepsis.

**Key words: neonatal – sepsis- bacteria – antibiotics - resistance**

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(GBS) group B

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(5)

(4)

(3)

%1

Septicemia

·(1)

10-1

(7,6)

(9,8)

250/1

(12)

(11)

(10)

(13)

·(1)

(gram-negative)

(E-coli)

(

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·(2)

(Enterobacter)

,(klebsiella)

streptococcus

(gram-positive)

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(stph.aureus)

(strep.)

·(18,17,16,15,14) (staph.alp.)

·( )

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( + )

( + + ) ·(6,3)

: ·(19)

2002

· 2004 2003

·(20,19,13,11)

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48

%43.5

24

%20.26

: (1)

المجموع	م 2004	م 2003	م 2002
4355	1453	1481	1421
1895	657	680	558
%43.5	%45.2	%45.9	%39.27
384	179	106	99
%20.26	%27.24	%15.59	%17.74

2003

2004

(p&lt;0.001) 2002

2003 2002 2002

.(P&gt;0.2)

2004 2003

:

P&lt;0.001

,%35.77

.(P&gt;0.3) 2004 2003

,%37.15

. 2002

.%48.7

: (2)

المجموع	م2004	م2003	م2002
1558	552	515	491
%35.77	%37.99	%34.77	%34.55
704	233	251	220
%37.15	%35.46	%36.9	%39.43
187	80	55	52
%48.7	%44.7	%51.9	%52.53

.(p&gt;0.05)

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.(p>0.05)

( 384 )

(263 )

(114 )

(7) , .(p<0.001)

:(3)

المجموع	م2004	م2003	م2002	
263	115	72	76	gram-
114	60	32	22	gram+
7	4	2	1	
384	179	106	99	
%68.49	%64.24	%67.92	%76.77	
%29.7	%33.52	%30.18	%22.22	

: (P>0.05)



: (4)

المجموع	م2004	م2003	م2002	
43	30	8	5	<b>streptococcus</b>
46	21	14	11	<b>staph.alp</b>
25	9	10	6	<b>staph.aureus</b>
<b>114</b>	<b>60</b>	<b>32</b>	<b>22</b>	

: (5)

المجموع	م2004	م2003	م2002	
155	51	58	46	<b>Klebsiella</b>
28	28	0	0	<b>Burkholderia cepacia</b>
20	8	5	7	<b>Enterobacter</b>
19	5	6	8	<b>E-coli</b>
17	15	1	1	<b>Serratia</b>
7	4	0	3	<b>Acinitobacter</b>
7	0	1	6	<b>Pseudomonas</b>
3	2	1	0	<b>Achromobacter</b>
2	0	0	2	<b>Chrysonomas</b>
2	1	0	1	<b>Citrobacter</b>
1	1	0	0	<b>Edwardseella</b>
1	0	0	1	<b>Salmonella</b>
1	0	0	1	<b>Proteus</b>
<b>263</b>	<b>115</b>	<b>72</b>	<b>76</b>	

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: (6)

<		>		
%83.26	129	%16.8	26	
%64.3	18	%35.7	10	
%55	11	%45	9	
%31.6	6	%68.42	13	
%76.5	13	%23.5	4	
%58.33	14	%41.66	10	
%72.6	191	%27.4	72	
%51.2	22	%48.8	21	
%41.3	19	%58.7	27	
%60	15	%40	10	
%49.12	56	%50.88	58	
%65.5	247	%34.5	130	

%72.6

%65.5

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%27.4

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%34.5

%50.88

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%49.12

%55.4

%77.33

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%56.5

( ) ( ) .%43.5

%77.5

.%22.5

%40.24 %59.76

: (7)

%71	110	%29	45	155	
%10	2	%90	18	20	
%31.6	6	%68.4	13	19	
%70.6	12	%29.4	5	17	
%85.7	6	%14.3	1	7	
%100	28	%0	0	28	
%5.9	1	%94.1	16	17	
%62.74	165	%37.26	98	263	
%25.6	11	%74.4	32	43	
%43.5	20	%56.5	26	46	
%60	15	%40	10	25	
%40.4	46	%59.6	68	114	
%56.5	213	%43.5	164	377	

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(8)

%71	%29	155	110	45	
%0	%100	155	0	155	
%0	%100	155	0	155	
%2.6	%97.44	155	4	151	
%61.3	%38.7	155	95	60	+
%74.8	%25.2	155	116	39	+

%100

:(9)

%89.3	%10.7	28	25	3	
%92.86	%7.14	28	26	2	
%14.3	%85.7	28	4	24	
%7.2	%92.8	28	2	26	
%28.6	%71.4	28	8	20	
%35.7	%64.3	28	10	18	
%50	%50	28	14	14	
%60.7	%39.3	28	17	11	
%28.6	%71.4	28	8	20	
%14.3	%85.7	28	4	24	+
%17.86	%82.14	28	5	23	+
%28.57	%71.43	28	8	20	

+

+

:(10)

%29.4	%70.6	%10.5	%89.5	%10	%90	
%53	%47	%68.5	%31.5	%80	%20	
%0	%100	%0	%100	%0	%100	
%0	%100	%0	%100	%0	%100	
%35.3	%64.7	%36.8	%63.2	%60	%40	
%17.6	%82.4	%15.8	%84.2	%100	%0	
%53	%47	%57.7	%42.3	%50	%50	
%0	%100	%42.1	%57.0	%70	%30	+
%0	%100	-----	-----	%0	%100	
%0	%100	-----	-----	%50	%50	+

%100

+

%100

%100

+

+

+

-	-	%25.6	%74.4	
%100	%0	%55.8	%44.2	
%80	%20	%44.2	%55.8	
%52	%48	%34.9	%65.1	
%56	%44	%20.9	%79.1	+
-	-	%25.6	%74.4	
%56	%44	%76.7	%23.3	+
%84	%16	%23.3	%76.7	
%12	%88	%20.9	%79.1	
%24	%76	%18.6	%81.4	
%52	%48	-	-	
%20	%80	-	-	

7

37.2 (21)

(22) %43.5

(6)

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%43.5

1

%20

%30

(1)

		(22)	%9.5	
			(23)	%20.8
	%67	(6)	%43	
	(28)		(24)	
%65.5	%34.5			
			(25)(%35,8)	1997
(6)%55				
(21)%48	(8)%62	(18)	%19.7	(15) %15
		2004		
			(p<0.001)	
%29.7	%68.49			-
			%37.15	
%55.4		%48.7		
	%77.33		(p<0.001)	
%77.5			31.8-39.6	
%59.7		(26)%7.6		(3)
		Tallur	(6)%19.4	
(26,3)			(7)%47.5	الهند
	(29)	%56.9	(27)1992	%52.3
(8)	(24)	(30)	(17)2000	%44
		(6)		(25)1997
	(21)			

2001  
 (18) ·(18,17,16,15) %82.5 و %66

2002  
 %40.35 %10.65 %58.9  
 %21.9 %37.3 %7.6  
 %7.22  
 ·(26,3) 2004

(21) (Burkholderia)  
 (24) (9) , 28  
 (13) (29) (30) 15

%23  
 %26.4 (6)  
 %29.7 (15)1993 ,  
 (18)2001 ,(9) ,(24)  
 · ,(21)

·(30)  
 ·(13)

(16,15)1992-1982  
 : -  
 %100 2000 ·(17,16)1999-1993



(%70-55) %71  
 %22 .%61.3 +  
 (24)(%40-14) (22) (%90-82)  
 (%50-28)  
 %10 %85.7 %92.8  
 (15) %15 %82.14 +  
 %26 .%71.23  
 %71 (16)1994  
 (16)1994 %17 (%90-70)  
 (%80-53)  
 %100 (17)2000 %71  
 %37 (%100-60)  
 %60 (16)94  
 %8 (%84.2-%63.2)  
 %10.5 (16)94  
 %36.8  
 (16)94 %21  
 ( ) (8)%91.4  
 (%90-70)  
 (8)(%75-25)  
 (%50-23)  
 (30)%32

1994	%26			
%52	1999	%39.8		%25.6
%24	1999	%3.6		%55.8
		:		
		-		
		-	(5,4,3)	
		-	%80	%52
			%24	%12
			%37	
		-	(30)	%46 (29)
			(9)	615
		-	%75	
				(24)
)		-		
(				
	(31) 1994	%26		
	%52	(32) 1999	%49.4	

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