



Commentary

A Survey for Detection of the Urinary Tract Infection by Urine Culture in Younger than Eight Weeks Old Infants Suffering From Ichter in Amiralmomenin Hospital in Zabol City

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Introduction

Jaundice is one of the most common neonatal and infantile diseases [1] and the most common cause of hospitalization in neonates and infants; this disorder occurs in 60% of infants and 80% of preterm infants. It is often physiologic and does not require special action, but it can be a sign of an important disease, and if not treated properly, leads to serious and dangerous complications such as Kernicterus (bilirubin deposition in the brain) that causes lifelong disability [2]. One of the reasons for the increase in serum bilirubin levels is the transfer from fetal to infant phase [3] and the temporary inability of the neonate liver to purify the bilirubin from the blood, because bilirubin is excreted by the pair during the fetal period; however, during the neonatal period, bilirubin is excreted by the liver cells and through the biliary and gastrointestinal tract [4]. prolonged jaundice refers to cases where it lasts for more than two weeks in term infants and three weeks in preterm infants [5]. Jaundice is divided into two types of direct and indirect [6]. The American Academy of Pediatrics has guidelines for healthy neonates with hyper-bilirubinemia, which include determining the maternal and infant blood group, direct coombs, and total and direct bilirubin concentrations [7]. In many infants with severe jaundice, there is no cause for jaundice [8]. There are reports that hyper-bilirubinemia may be associated with bacterial infections due to unknown causes in newborns [9]. Recognizing the predisposing affecting the exacerbation or jaundice can be effective in reducing the severity and control of this disease, as well as controlling the initial problem. One of these factors is UTI, which is a common and serious problem in neonates, so that if it is timely diagnosed and decisively treated and necessary follow-up is done for the underlying cause, its complications can be mitigated. It can affect the entire life of a human [10]. The mechanism of jaundice following urinary tract infection may be a disturbance of the liver microscopic cycle, the direct effect of products produced by bacteria or mediators by intermediate secretion of intestinal poisons. Also, the formation of hemolysis (mild blood disruption) by *E.coli* and other warm-negative organisms, followed by an increase in indirect bilirubin levels are some other possible consequences [11].

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Methods

This case-control study done on 100 infants less than eight weeks have been admitted in the zabol Amiralmomenin hospital at the time of 2015. Method of sampling is Convenience (available). Apart from routine testing of infants jaundice, a urine sample was taken for urine analyse and urine culture. After data collection entered them into the software spss18 and using descriptive and inferential statistics in the form of tests conducted to analyze the data (Tables 1-3).

Findings

Table 4 analyzes some variables, including jaundice onset age, birth weight, white blood cell count, hemoglobin, plaket, total billirubin, and direct billirubin. According to the results of independent statistic t-test, the p-value calculated for age at the beginning of jaundice was 0/546 (p-value>0.05), for birth weight 833 (p-value>0.05), for the hemoglobin level was123.3 0 (p-value>0.05), for plate count 0.001 (p-value>0.05), for white blood cell count 0.008 (p-value<0.05), for total bilirubin of 0.01 (p-value<0.05) and for direct bilirubin was 0.122 (p-value<0.05). The mean ± SD mean for those who have a positive urine culture is 3.96 ± 1.2/3.9 for the onset age of jaundice, 2.88 ± 0.54 for birth weight, 81.4 ± 2714.16 for white blood cell count, 15.01 ± 2.35 for the hemoglobin level, 302.44 ± 103.41 for platelet, 18.81 ± 3.69 for bilirubin total and 94.4 ± 0.52 for direct bilirubin; The mean ± SD mean for those who have a negative urine culture is 3.91 ± 2.22 for the onset age of jaundice, 2.9 ± 0.51 for birth weight, 805.05 ± 1483.06 for white blood cell count, 14.61 ± 2.77 for hemoglobi level, 280.73 ± 103.44 for plaket, 27.34 ± 33.37 for total billirubin and 0.44 ± 0.49 for direct billirubin.

Findings:

Table 1: Frequency distribution of subjects based on sex.

Sex		UTI		P value
		Positive	Negative	
Girl	Frequency	4	30	0.014
	Percent	11.8	88.2	
Boy	Frequency	23	43	
	Percent	34.8	65.2	

[Note: Based on the results of (Table 1-4), according to the Chi-square test, the p-value calculated for gender is 0.014 (p-value <0.05).]

Table 2: The history of jaundice in the family of studies neonates

The history of jaundice		Jaundice	
		Positive	Negative
Positive	Frequency	22	0
	Percent	22	0
Negative	Frequency	78	0
	Percent	78	0

[Note: (Table 2) categorizes subjects in two groups of with and without history of jaundice in the family. Based on the results of the table, 22 neonates had a history of jaundice in their families, and 78 neonates had no history of jaundice in their families.]

Table 3: Diagnosis of urinary tract infection through urine culture in newborns.

Urine analysis		Urine culture		P value
		Positive	Negative	
Positive	Frequency	27	22	0.001
	Percent	53.1	46.9	
Negative	Frequency	0	51	
	Percent	0	100	

Table 4: Mean, standard deviation, minimum and maximum of some variables and some factors of neonatal blood tests.

Variable	Urine infection	Number	Mean	SD	P-value
Jaundice onset age	Positive	27	3.96	2.1	0.546
	Negative	73	3.91	2.22	
Birth weight	Positive	27	2.88	0.54	0.833
	Negative	73	2.9	0.51	
White blood cell count	Positive	27	9614.81	2714.16	0.008
	Negative	73	8052.05	1483.06	
Hemoglobin	Positive	27	15.01	2.35	0.123
	Negative	73	14.61	2.77	
Plaket	Positive	27	302.74	103.4	0.961
	Negative	73	280.73	103.84	
Total billirubin	Positive	27	18.81	3.69	0.01
	Negative	73	17.33	4.27	
Direct billirubin	Positive	27	0.94	0.52	0.012
	Negative	73	0.64	0.49	

Discussion and Conclusion

Jaundice is one of the most common clinical findings among newborns in the first days of birth. Recognizing the predisposing affecting the exacerbation or jaundice can be effective in reducing the severity and control of this disease, as well as controlling the initial problem. One of these factors is UTI, which is a common and serious problem in neonates.

A total number of 100 neonates were examined in the present study. Urine culture was positive in 27 and negative in 73. Fatemeh Eghbalian et al study, Entitled Prolonged Jaundice, examined premature urinary tract infection in Ekbatan Hospital of Hamedan in 2009, according to which 6.6% in neonates turned out to have positive urine culture [12]. Hasan Bashkabadi et al study was conducted to examine the prevalence of urinary tract infection in neonates with jaundice referring to Ghaem Hospital in Mashhad from 2003 to 2009; the results showed that the prevalence of urinary tract infections was 97.7%. The prevalence of urinary tract infections in neonates with prolonged jaundice, In Garcia's study entitled "jaundice as a premature sign of a urinary tract infection in a neonatal period" conducted in 2002 in a hospital in Los Angeles, turned out to be 28.57%; this rate was 40% in Rooney's study [13]. The prevalence of urinary tract infections in neonates participating in this study was 27%, which is different in comparison with previous studies, which is probably due to urine sampling, laboratory kits and sampler technician and, of course, other risk factors, such as environment. UTI as more prevalent among boys in comparison with girls, but this difference was not statistically significant [14]. The results of Nasrin Khales et al study, entitled 'The prevalence of UTI in neonates with prolonged jaundice referring to Ali Asghar Zahedan Hospital in Zahedan in 2005', the incidence of urinary tract infection in boys was slightly more frequent than girls. There was no significant difference between the two sexes regarding the prevalence of urinary tract infection [15]. 34 girl and 66 boy

neonates were examined in the present study. The prevalence of urinary tract infection in both sexes was slightly different, with boys being more prone to this disorder (p-value=0.014); the data in this part of our study is consistent with the research by Beskabadi et al and Nasrin Khales et al. [16].

Conclusion

Considering the low prevalence of urinary tract infection in neonates with jaundice, but without other symptoms, it is recommended to conduct urine test in case of prolonged jaundice (lasting for more than two weeks), delayed jaundice, cases without any sepcific cause of jaundice, serious redcuton of billirubin, weight loss, swallowing, and fever; it is, also, recommended to conduct another study on infants older than 8 weeks of age and in infants whose jaundice cannot be attributed to any certain cause.

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