ORIGINAL
MƏQALƏLƏR

ОРИГИНАЛЬНЫЕ
СТАТЬИ

ORIGINAL
ARTICLES

CLINICAL CHARACTERISTIC OF ICTERIC SYNDROME IN NEW-BORN BABIES

*Daniyarova F.A., Asimova N.M.

Tashkent Pediatric Medical Institute, Department of Neurology, Pediatric Neurology, Tashkent, Uzbekistan

Abstract

At the modern time in spite of certain achievements of the "mother and child safety" service, there is still a tendency of new-born babies morbidity growth. Hyper bilirubinemia is one of the most often met pathologic states in the new-born period. Nowadays the frequency of the phenomenon is growing in the whole world becoming almost universal. According to the data given by various authors the frequency of pathologic hyper bilirubinemia in new-born children takes 25-65% and 70-90% in pre-mature born babies.

Key words: icteric syndrome, new-born babies, bilirubinemia.

Excessive accumulation of bilirubin in the blood of new-born babies, appearing as a result of incompetent system of pigment rendering, is dangerous for a baby, as it can cause damage of central nerve system and other dangerous complications and consequences [2, p. 16; 5, p. 132].

Some significant differences in the approaches to new-born jaundice therapy in the world neonatal centers prove that the notion of neonatal hyper bilirubinemia biology is still incomplete and requires further researches in that area for firmer biologic basis of the therapy [3, p. 100].

Aim of the research: is to study the risk factors and the peculiarities of physiologic hyper bilirubinemia progress in pre-mature born babies.

Materials and research methods: The study was based on the results of examination of 46 children, including the anamnesis and health status of the mothers. Among the new-born babies there were 26 boys (56.5%) and 20 girls (43.5%). In the progress of the research the new-born babies were divided to 2 groups. The first group included 20 new-born babies without jaundice - comparison group, and 56.5% (n=26) new-born babies had physiologic hyper bilirubinemia (PH) - main group.

Dependently on the maximal level of bilirubin and the duration of jaundice the babies were divided to two subgroups: I group - with moderate physiologic hyper bilirubinemia (the level of bilirubin less than 230.0 mkmol/l); II group -

with high level physiologic hyper bilirubinemia (the level of bilirubin 230.0-270.0 mkmol/l, long-lasting - more than 21 days). I group involved 73.1% (n=19) new-born babies, and the II - 26.9% (n=7) babies.

The results of the research: We detected reliable dependence of hyper bilirubinemia frequency on the mother's age in PH group, more among women above 35 and young mothers in comparison with the control group ($p < 0.001$).

In the study of obstetric anamnesis it was detected that the frequency of moderate PH was reliably higher in new-born babies born from the first or fourth pregnancy ($p < 0.05$). The new-born babies born from the 5-7 pregnancies and repeated births reliably more often had high level physiologic hyper bilirubinemia ($p < 0.05$).

In the PH group, different from comparison one, there were more often medical abortions (three and more) preceding the given pregnancy - 5 mothers (19.2%) of the group different from 5% women of the comparison group ($p < 0.05$). In the moderate PH group that kind of rule was not detected, and, consequently, three and more abortions in the anamnesis of the women can be considered as one of the risk factors for the development of high hyper bilirubinemia in their new-born babies.

In the study of the somatic status of the women it was detected that the majority of them had chronic pathology of one or several systems

* e-mail: madjidova1@yandex.ru

at the moment of conception. In the comparison group the disorder of lipid exchange with obesity was observed in 7.7%, I degree goiter with euthyrosis in 3.8% and with hypothyrosis in 3.8% women.

One of the often states in the moderate PH group was disorder of lipid exchange with obesity - 15.8%, less with mass deficiency - 5.2%. The I degree goiter with euthyrosis was observed in 5.2% women during pregnancy, 5.2% - with hypothyrosis, and there was no thyrotoxicosis manifestations.

The women from high PH group reliably more often had disorder of lipid exchange with obesity - 42.9%, while the thyroid pathology didn't had a significant impact on the level of hyper bilirubinemia.

Mothers of the I group (moderate PH) had reliably more often registered chronic diseases of billiary tract ($p<0.01$), urinary (exacerbation of chronic pyelonephritis) ($p<0.01$) and sexual (chronic adnexitis and chronic endometritis) ($p<0.05$) systems. The II group showed (high PH) chronic diseases of billiary tract ($p<0.01$), chronic tonsillitis ($p<0.01$), chronic diseases of urinary (pyelonephritis, cystitis) ($p<0.005$) and sexual (adnexitis) ($p<0.005$) systems.

The mothers of comparison group had no exacerbations of chronic tonsillitis and chronic pyelonephritis.

We performed evaluation of the perinatal risk factors. The reliable high risk was registered in the new-born babies from the high PH group ($p<0.05$). in the moderate PH group of babies we registered low level of perinatal risk ($p<0.01$).

For the babies of the high PH group the valuable factors were mothers' Chlamydia ($p<0.01$), mycoplasma ($p<0.001$), urea plasma ($p<0.001$) infection, colpitis ($p<0.05$), bacterial vaginosis ($p<0.01$) and asymptomatic leukocyturia.

In the moderate PH group mothers' infection was reliable lower ($p<0.05$).

One of the reliably valuable development factors for high level hyper bilirubinemia was severe gestosis (pre-eclampsy and severe nephropathy). All the babies born from the mothers with these pathologies had high level of hyper bilirubinemia ($p<0.001$).

The progress of birth has also a great impact on the adaptation abilities of a new-born baby. There is noted high degree direct correlation link between bradycardia in birth and the degree of jaundice (for the high PH group $r=0.477$). A long-lasting labour period (more than 1 hour) was a high level hyper bilirubinemia risk factor ($r=0.51$), but the link between moderate PH and long-lasting labour period was not detected ($r=0.17$).

All the new-born babies were born at the 38-41 weeks of gestation. The evaluation of the comparison group new-born babies according to Apgar scale at the first minute took 7 points - 1.8%, 8 points - 53.1%, 9 points - 43.1%, 10 points - 2.0%. Children with high PH more often demanded emergency help in the delivery room.

Evaluation according to Apgar scale in the PH group at the first minute was reliably lower: 7 points in 7.5% ($p<0.001$), 8 points - 70.2% ($p<0.05$), 9 points - 22.3% ($p<0.01$). At the 5th minute only 10 points differences were reliable ($p<0.001$), that was not noted in the high PH group of babies. It means that babies with PH reliably more often suffered during birth. They had significantly more often delivery trauma - big delivery tumor ($p<0.05$), excessive petechia ($p<0.05$), combination of cephalo-hematoma and petechia ($p<0.001$), cephalo-hematoma ($p<0.01$), including large ones ($p<0.001$).

Reliably important high hyper bilirubinemia risk factors were ZVUR ($p<0.05$), 4000 gr and more body weight at the birth ($p<0.01$), morphologic-functional immaturity ($p<0.001$).

New-born babies with high PH had reliably more often de-adaptation syndrome ($p<0.001$), more often they had belch, sluggishness and sleepiness ($p<0.001$). Pain syndrome was observed mostly in new-born babies with birth body weight above 4000 gr (in 86.4% cases). Children with ZVUR and morphologic-functional insufficiency (MFI) more tend for thermo lability ($p<0.05$), they had more often registered alterations in neurologic status - sluggishness, muscle hypotension ($p<0.01$), often belch syndrome ($p<0.05$).

Pathologic loss of weight in the babies with high PH was observed in 22.6%, and that is reli-

ably higher than in the comparison group - 2.4%, ($p < 0.001$). Pathologic loss of body weight (above 8%) in small body weight babies was observed rarer than in big new-born babies, and we consider it to be due to subcutaneous fat layer, abundant excretion of meconium in big babies and deficiency of foremilk in their mothers initial two days. The maximal loss of original weight was noticed in big new-born babies mostly at the 4th day of life.

The new-born babies with moderate PH had prevailing second degree of dermal hysteria (according to Kramer) - 52.6%, the third one was observed in 31.6%, the first one in 10.5%, and the fourth one only in 5.2%. The group of new-born babies with high PH significant number of the babies had the third (57.1%) and the fourth (28.6%) degrees of dermal hysteria according to Kramer; the second degree was noted in 14.3% of children. Thus, there is direct correlation link between the blood serum bilirubin level and the intensity of new-born baby's jaundice ($p < 0.05$).

The presence of abundant petechial rash on the face defined appearance of sub-hysterical staining of skin at the second day of life. Dissolving of petechia occurred, as a rule, at the 5-6th days of life, and jaundice disappeared to the 10-14th days (if there were no additional complicating factors, such as ZVUR, MFI, pathologic loss of weight). Resolving of cephalohematoma, vice versa, was accompanied by the late visual appearance of jaundice (5-6th days) and its long duration - 14-30 days.

Elimination of icteric syndrome in the group of babies with high PH occurred slower, than in the group of new-born babies with moderate PH.

The babies with moderate PH had no jaundice in 52.6% at the end of the first week of life, 42.1% - to the 11-14 days, 5.2% of new-born babies - to the 21st day of life. At the same time, only 14.3% babies with high PH had no jaundice at the end of the 1st week, in 14.3% the icteric level decreased to the 1st degree till the 10-14th days of life; disappearance of jaundice in 71.4% occurred to the end of the 3rd week of life, and in 14.3% jaundice lasted one month.

Visually appearance of skin jaundice was

observed with 82 ± 11.2 mkmol/l blood serum bilirubin. The new-born babies with low subcutaneous fat layer had visual skin jaundice with 84 ± 9.6 mkmol/l total bilirubin, in big new-born babies with well-developed subcutaneous fat layer - with 78 ± 7.4 mkmol/l.

The new-born babies with high PH growth of blood serum total bilirubin at the first day was 1.5 ± 0.4 mkmol/l/hour, second day 3.5 ± 0.6 mkmol/l/hour, third - 4.1 ± 1.1 mkmol/l/hour, fourth - 5.3 ± 1.7 mkmol/l/hour, fifth - 2.2 ± 0.4 mkmol/l/hour, sixth - 0.3 ± 0.5 mkmol/l/hour, and starting from the seventh day - didn't rise. The maximal growth in the new-born babies with high PH was registered at the fourth day of life - up to 7.0 mkmol/l/hour and the minimal one - at the sixth - 0.8 mkmol/l/hour.

Thus, on the basis of the achieved results we can conclude:

1. the risk factor of moderate PH is mother's age above 35, chronic pathology of biliary tract and urinary system, II degree obesity. Risk factors of high level PH, besides that, are young age of mother, often ARVI (2 times during pregnancy), chronic fetal hypoxia, severe gestosis and pathologic progress of birth.

2. For the baby reliable risk factors of moderate PH development in mature new-born babies were morphologic-functional immaturity and de-adaptation syndrome. For the development of high level PH the reliable factors is retardation of fetal development, body weight above 4000 gr at the birth and delivery trauma (abundant petechia, cephalohematoma).

3. Bilirubin level in the babies with physiologic hyperbilirubinemia varies from 79 to 270 mkmol/l, maximal rise of bilirubin occurs at the 3-4th day.

4. Disappearance of icteric color in case of moderate PH in 54.4% children occurred at the end of the first week of life, at the end of the second week jaundice was absent in 93.2% of new-born babies. With high PH disappearance of icteric color at the end of the first week was observed only in 14.3%, to the end of the third week in 71.4%, and in 14.3% jaundice lasted a month.

REFERENCES

1. Ledyayev M.Y., Zayachnikova T.Y., Saneyeva T.A., Ledenev B.B., Burzak I.N. Modern approaches to the diagnosis of pathologic states in pre-term born babies // Bulletin of Volgograd state medical university. 2010. - №2. - P.21-24.
2. Neonatal hyper bilirubinemia. Methodic manual. Korjinski, U.S., Omelchenko O.V., Savchak N.S., Golik R.G. - Lvov, 2004. - 53 p.
3. Khaletskaya O.V., Solntsev V.V. Long-lasting variants of conjugation hyper bilirubinemia in new-born babies: risk factors and prophylactics // Medical almanac. - 2009. - № 4(9). - P. 99-102.
4. Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. American Academy of Pediatrics. Clinical practice guideline. Subcommittee on hyperbilirubinemia // Pediatric. - 2004. - Vol. 114, № 1. - P. 297-316.
5. Ip S., Chung M., Kulig J. /An evidence-based review of important issues concerning neonatal hyperbilirubinemia. American Academy of Pediatrics. Technical report // Pediatrics. - 2004. - Vol. 144, № 5. - P. 130-153.

XÜLASƏ

YENİ DOĞULMUŞLARDA SARILIQ SİNDROMUNUN KLİNİK XARAKTERİSTİKASI

Daniyarova F.A., Azimova N.M.

Daşkənd pediatrik tibb institutunun nevrologiya, uşaq nevrologiyası kafedrası, Daşkənd, Özbəkistan

Təqdim edilmiş məqalədə 46 uşağın müayinəsinin nəticələri tədqiq edilmişdir. Fizioloji hiperbilirubinemiya olan uşaqlarda bilirubinin qanda səviyyəsi 79-270 mkmol/l civarında olmuşdur, bilirubinin səviyyəsinin maksimal qalxması 3-4-cü sutkada olur. Orta dərəcəli fizioloji hiperbilirubinemiya zamanı sarılığın keçməsi getməsi 54,4% uşaqlarda həyatın birinci həftəsinin axırına təsadüf edir, ikinci həftənin axırında yenidoğulmuşların 93,2%-də sarılıq sindromu keçib getmişdir. Yüksək fizioloji hiperbilirubinemiya zamanı həyatın birinci həftəsinin sonunda sarılıq sindromunun keçib getməsi yalnız yeni doğulmuşların 14,3%-də, üçüncü həftənin sonunda 71,4%-də rast gəlinmişdir. Yeni doğulmuşların 14,3%-də isə sarılıq bir aya qədər müşahidə edilmişdir. Qan zərdabında bilirubinin yüksək səviyyəsi ilə yenidoğulmuşlarda sarılığın intensivliyi arasında birbaşa korrelyasion əlaqə təyin edilmişdir ($r < 0,05$).

Açar sözlər: sarılıq sindromu, yeni doğulmuşlar, bilirubinemiya.

РЕЗЮМЕ

КЛИНИЧЕСКАЯ ХАРАКТЕРИСТИКА ЖЕЛТУШНОГО СИНДРОМА У НОВОРОЖДЕННЫХ

Даниярова Ф.А., Азимова Н.М.

*Ташкентский педиатрический медицинский институт,
кафедра Неврологии, детской неврологии, г. Ташкент, Узбекистан*

В основу данной статьи положены данные обследования 46 детей. Уровень билирубина у детей с физиологической гипербилирубинемией колеблется в пределах от 79 до 270 мкмоль/л, максимальный подъем уровня билирубина приходится на 3-4 сутки. Исчезновение желтушного окрашивания при умеренной физиологической гипербилирубинемии у 54,4% детей происходило к концу первой недели жизни, к концу второй недели желтуха отсутствует у 93,2% новорожденных. При высокой физиологической гипербилирубинемии исчезновение желтушного окрашивания к концу первой недели наблюдалось только у 14,3%, к концу третьей недели жизни - у 71,4%, а у 14,3% желтуха держалась до месяца. Установлена прямая корреляционная связь высокой степени между уровнем билирубина сыворотки крови и интенсивностью желтухи у новорожденного ребенка ($p < 0,05$).

Ключевые слова: желтушный синдром, новорожденные, билирубинемия.

Redaksiyaya daxil olub: 12.12.2014

Çapa tövsiyə olunub: 08.01.2015

Rəyçi: t.ü.f.d., dos. Z.M.Sadixova