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DIAGNOSIS OF CONGENITAL CMV IN CHILDREN IN THE FIRST YEAR OF LIFE

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Abstract
Unfortunately, many UTIs in the newborn period do not have a specific clinical picture and diagnosis of TORCH-infections only by clinical manifestations (without involving specific microbiological studies) leads to diagnostic errors in 90-95% of cases. The diagnosis of UTI is substantiated by the totality of:
- anamnestic,
- clinical
- laboratory data [20,21,22,23].

Keywords: Newborns, high-risk groups, antenatal infections, PCR, IgG, IgM.

Introduction

Newborns from high-risk groups are subject to examination. Risk factors for antenatal infections:
1.aggravated obstetric history (miscarriages, stillbirths, failure of previous pregnancies, birth of children with multiple malformations or died at an early age);
2.abnormalities of the course of the current pregnancy and labour (threat of termination of pregnancy, polyuria, premature discharge, premature delivery, placenta accreta, premature placental abruption);
3. infectious processes during pregnancy, including acute respiratory viral infections;
4. birth of a child with signs of SIDS, CHD;
5. acute neonatal hydrocephalus;
6. skin exanthems at birth;
6. jaundice of unclear genesis;
7. neurological symptoms appearing for the first time a few days after birth.
8. Haemorrhagic syndrome
9. Neurosensory hearing loss [4,5,6]

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Indications for laboratory and instrumental examination to exclude/verify congenital CMVI in children in the first year of life:

-presence in the newborn of clinical signs of congenital infection without regard to possible etiology; documented primary CMV infection, reactivation of latent, superinfection with a new strain of CMV in the mother during pregnancy regardless of the presence/absence of clinical manifestations of the disease in the child [7,8];

-signs of CMV lesions in the postpartum by pathomorphological examination, as well as detection of CMV antigens in the postpartum by immunohistochemical (hereinafter referred to as IHC) or immunocytochemical (hereinafter referred to as ICC) methods, genetic material of the pathogen by PCR (if such studies were conducted) [9,10];

-signs of intrauterine infection detected antenatally.

Necessary minimum of primary investigations for etiological verification of the disease in case of suspected congenital CMV infection in newborns:

- examination of blood serum (saliva, urine, liquor) of the newborn (and mother, substrate - blood serum) simultaneously quantitatively for Ig M and Ig G to CMV by ELISA (or CLIA) method with indication of threshold values [11,12].

-sensitivity of the test system (for Ig G - in IU/ml, for Ig M - in conventional units, in the form of positivity coefficient or optical density values of the test sample and positive control serum).

- PCR (blood, urine, saliva, liquor) - qualitative and quantitative analysis with determination of virus copy number

- Rapid culture method - Shell vial assay.

The first blood collection for serological studies in a newborn should be done BEFORE the administration of immunoglobulins! IgG avidity determination, PCR (blood, leukoconcentrate, urine, saliva, liquor), ICR with monoclonal sera (blood, liquor) must be used for etiological verification (if possible) [13,14].

Other laboratory and instrumental investigations are performed according to clinical indications. Primary examination is performed as early as possible in life (in the maternity hospital). When transferring a newborn to a neonatal pathology department (children's hospital, perinatal centre, etc.), the results of tests performed in the maternity hospital are included in the transfer epicrisis with the mandatory indication of the date of collection of biological samples, sensitivity thresholds of test systems and contact information of the laboratories that performed the tests. If the initial examination is not performed in the maternity hospital, it should be performed in the neonatal pathology department within the first 24 hours of admission [15,16,17,18,19].

It should be noted that repeated laboratory tests should be performed in the same laboratory where the primary tests were performed. If primary CMV infection (exacerbation of latent CMV infection, superinfection with a new strain of CMV) is documented in the maternity hospital (or such a possibility could not be excluded), or antenatal signs of congenital infections were detected, but no clinical manifestations of congenital CMV infection were detected in the newborn during the stay in the maternity hospital, the mother and child are discharged under the supervision of a paediatrician and an infectious disease specialist at the outpatient clinic. In the discharge epicrisis, the results of the conducted tests (or the dates of biological samples collection with the indication ‘in progress’) with the indication of the sensitivity thresholds of serological reactions and the

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contact information of the laboratories that performed the tests are specified in as much detail as possible [20,21,22].

If in these situations the final diagnosis is not formulated in the maternity hospital (no tests were conducted or their results were not obtained), the recommendations for discharge indicate the need to examine the newborn and implement dynamic monitoring in outpatient settings to exclude/confirm the subclinical form of congenital acute CMVI, congenital chronic CMVI. In this case, verification (exclusion) of congenital CMV infection is performed on an outpatient basis by specialists of a children's outpatient clinic (paediatrician, infectious disease specialist) on the basis of studies of specific antibody levels and Ig G avidity in serum, PCR and PCR results in available biological substrates performed in dynamics [23,24,25].

If it is impossible to perform PCR and ICR tests and dynamic serological tests are insufficiently informative for additional examination, the child should be referred to an institution providing full-fledged examination and treatment of children with congenital infections, as defined by local guidelines). Other laboratory and instrumental investigations (biochemical, radiation, etc.) at the outpatient stage are performed according to clinical indications [2,3,4,5,6,7,8,9].

References

1. Abduhakimov B. A. et al. Bolalar va o'smirlarda birlamchi tuberkulyozning o'ziga xos kechish xususiyatlari va klinik-laboratoriya usullari //Ta'lim innovatsiyasi va integratsiyasi. – 2024. – Т. 32. – №. 3. – С. 139-143.
2. Бердиярова Ш. Ш. и др. Клинико-лабораторная диагностика фолиевой кислотодефицитной анемии //TADQIQOTLAR. UZ. – 2024. – Т. 49. – №. 3. – С. 46-53.
3. Umarova T. A., Kudratova Z. E., Axmadova P. Role of conditionally pathogenic microflora in human life activities //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 11. – С. 29-32.
4. Muhamadiyeva L. A., Kudratova Z. E., Sirojeddinova S. Pastki nafas yo'llari patologiyasining rivojlanishida atipik mikrofloraning roli va zamonaviy diagnostikasi //Tadqiqotlar. Uz. – 2024. – Т. 37. – №. 3. – С. 135-139.
5. Umarova T. A., Kudratova Z. E., Norboyeva F. Modern aspects of etiology and epidemiology of giardias //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 11. – С. 25-28.
6. Isomadinova L. K., Daminov F. A. Glomerulonefrit kasalligida sitokinlar ahamiyati //Journal of new century innovations. – 2024. – Т. 49. – №. 2. – С. 117-120.
7. Umarova T. A., Kudratova Z. E., Maxmudova H. Mechanisms of infection by echinococcosis //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 11. – С. 18-21.
8. Даминов Ф. А., Исомадинова Л. К., Рашидов А. Этиопатогенгетические и клинико-лабораторные особенности сальмонелиоза //TADQIQOTLAR. UZ. – 2024. – Т. 49. – №. 3. – С. 61-67.
9. Umarova T. A., Kudratova Z. E., Baxromova M. Autoimmune diseases: new solutions in modern laboratory diagnostics //International Conference on Modern Science and Scientific Studies. – 2024. – С. 78-81.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

10. Бердиярова Ш. Ш. и др. Узловой зоб и его клинико-лабораторная диагностика //TADQIQOTLAR. UZ. – 2024. – Т. 49. – №. 3. – С. 38-45.
11. Umarova T. A., Kudratova Z. E., Muhsinovna R. M. The main purpose of laboratory diagnosis in rheumatic diseases //International Conference on Modern Science and Scientific Studies. – 2024. – С. 82-85.
12. Umarova T. A., Kudratova Z. E., Ruxshona X. Contemporary concepts of chronic pancryatitis //International Conference on Modern Science and Scientific Studies. – 2024. – С. 11-15.
13. Хамидов З. З., Амонова Г. У., Исаев Х. Ж. Некоторые аспекты патоморфологии неспецифических язвенных колитов //Молодежь и медицинская наука в XXI веке. – 2019. – С. 76-76.
14. Umarova T. A., Kudratova Z. E., Muminova G. Instrumental diagnostic studies in chronic pancreatitis //International Conference on Modern Science and Scientific Studies. – 2024. – С. 16-20.
15. Umarova T. A., Kudratova Z. E., Norxujayeva A. Etiopathogenesis and modern laboratory diagnosis of prostatitis //International Conference on Modern Science and Scientific Studies. – 2024. – С. 6-10.
16. Амонова Г. У., Сулаймонова М., Кизи Ж. Пневмопатиянинг ателектатик шаклида чақалоқлар мия структураларидаги ўзгаришларнинг патоморфологияси //Новости образования: исследование в XXI веке. – 2024. – Т. 2. – №. 22. – С. 163-166.
17. Sabirovna I. N., Raykhona K. Clinical and laboratory changes in post-term infants //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 5. – С. 96-99.
18. Ибрагимова Н. С., Юлаева И. А. Сложности диагностики и лечения внебольничной пневмонии у детей раннего возраста //TADQIQOTLAR. UZ. – 2024. – Т. 39. – №. 1. – С. 58-62.
19. Laboratory diagnosis of torch infection bs Shukurullaevna, TF Uktamovich TADQIQOTLAR. UZ 48 (1), 200-206
20. Амонова Г. У., Исмоилов Ж. М. Реорганизация цитоархитектоники эпителиального пласта бронхов у кроликов с хроническим экспериментальным ларингитом //Молодежь и медицинская наука в XXI веке. – 2017. – С. 51-51.
21. Clinical and laboratory characteristics of renal pathology of pregnancy in the first trimester bs Shukurullayevna, MN Komilzhonovna TADQIQOTLAR. UZ 39 (1), 74-79
22. Umarova T. A., Kudratova Z. E., Maxmudova D. Pathogenesis of bronchial asthma development at the present stage //International Conference on Modern Science and Scientific Studies. – 2024. – С. 21-24.
23. Differential diagnosis of jaundice literature review BS Shukurullaevna Web of Medicine: Journal of Medicine, Practice and Nursing 2 (1), 41-49
24. Эшкабилов Тура Жураевич, Хамидова Фарида Муиновна, Абдуллаев Бахтиёр Саидович, Амонова Гулафзал Узбекбаевна, Исмоилов Жасур Мардонович Патоморфологические изменения легких при идиопатических фиброзирующих альвеолитах // Вопросы науки и образования. 2019. №28 (77).
25. Хамидов З. З., Амонова Г. У., Исаев Х. Ж. Некоторые аспекты патоморфологии неспецифических язвенных колитов //Молодежь и медицинская наука в XXI веке. – 2019. – С. 76-76.