

ASSESSMENT OF THE FUNCTIONAL STATE OF THE RESPIRATORY ORGANS IN CHILDREN WITH BRONCHO-OBSTRUCTIVE SYNDROME

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OPEN ACCESS

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Received: 08 January 2025
Revised: 16 January 2025
Accepted: 25 January 2025
Published: 29 January 2025

Funding source for publication:
Andijan state medical institute and
I-EDU GROUP LLC.

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Abstract.

Relevance. According to different authors, bronchial obstruction developing in children against the background of infectious diseases of the lower respiratory tract is observed from 5 to 40%. In children with aggravated allergy, broncho-obstructive syndrome (BOS) usually develops in 30-40% of cases, the same trend is observed in children who suffer from respiratory infections more than 6 times a year. **The purpose of the study:** to assess the functional state of the respiratory system in children with broncho-obstructive syndrome. **Materials and methods.** The study was conducted at the Pulmonology Department of the Children's Multidisciplinary Medical Center of the Andijan Region and the Pulmonology Department of the Republican Specialized Children's Scientific and Practical Medical Center. The study included 90 children aged 7 to 15 years. The control group consisted of 20 practically healthy children of the same age. The study of the external respiratory function (ERF) was conducted using the SEMA 2000 program on a SCHILLER SRIROVIT SR-1 spirometer (Moskva). Statistical processing of the obtained results was performed using the Statistica 6.0 software package. **Results and discussion.** Peak flow metric study showed that in 80.0% of children with acute obstructive bronchitis (AOB) peak expiratory flow rate (PEF) exceeded 80% of the norm, while in children with recurrent bronchial obstruction, a decrease in standard indicators was observed in 37.6% of children. PEF multipliers from 80% to 60% of the norm were noted in 44.1% of children with RB with BO and in 11.4% of children with AOB. PEF below 60% of the norm was noted in most cases (18.3%) in children suffering from RB with BO and in 8.6%6 cases in children suffering from AOB. Spirometry was used to determine obstructive, restrictive, or mixed types of ventilation disorders in children. Interestingly, 25.8% of children with COPD had vital capacity and other respiratory tract permeability parameters measured by spirometry within normal limits. **Conclusion.** The study revealed that the obstructive type is a specific type of pulmonary ventilation disorder detected by spirometry in children with AOB and RB with BO. Based on the studies conducted, most children have a decrease in the vital capacity of the lungs (VC) and the Tiffno index, which is considered a symptom of bronchial obstruction. This disease is usually caused by inflammatory changes in the bronchi and lungs.

Key words: bronchoobstructive syndrome, external respiration, analysis, acute obstructive bronchitis, vital capacity of the lungs, recurrent bronchitis.

Dolzarbligi. Bolalarda pastki nafas yo'llarining yuqumli kasalliklari fonida rivojlanadigan bronxial obstruksiya turli mualliflarning fikriga ko'ra, 5 dan 40% gacha kuzatiladi. Oilada allergologik anamnez bo'lgan bolalarda, bronxoobstruktiv sindrom (BOS) odatda 30-40% holatlarda rivojlanadi, xuddi shunday tendensiya yiliga 6 martadan ko'prok nafas olish yo'llari infeksiyalaridan aziyat chekadigan bolalarda mavjud. Bronxoobstruktiv sindrom (BOS) pediatriyaning dolzarb muammosi bo'lib, bolalarda nafas olish kasalliklari tarkibida birinchi o'rinni egallaydi. So'nggi yillarda shifokorlar mehnat faoliyati davomida bronxial obstruksiya kabi holatlarga ko'prok duch kelishmoqda. Erta yoshli bolalarda bronxoobstruktiv sindromning (BOS) paydo bo'lishi va rivojlanishiga turli omillar ta'sir ko'rsatadi. BOS rivojlanishida virusli infeksiya katta ahamiyatga ega. Bundan tashqari erta bolalik davri ko'plab immunologik mexanizmlarning nomukammalligi bilan tavsiflanadi: yuqori nafas yo'llarida interferon xosil bo'lishi, qon zardobidagi immunoglobulin A darajasi hayotning birinchi yilining oxiriga kelib kattalar darajasining 28% ni tashkil qiladi, chunki sekretor immunoglobulin A maksimal qiymatlar fakat 10-11 yoshda. Bundan tashqari perinatal patologiya, allergik anamnez, bronxlar giperreaktivligi, rahit, distrofiyalar, timus giperplaziyasi, erta sun'iy oziqlantirish, 6-12 oylik bolalarda kuzatilgan nafas olish a'zolari

kasalliklari ham bronxoobstruksiya rivojlanishida muhim ahamiyat kasb etadi.

Adabiyotlarga ko'ra, BOS bilan kechadigan kasalliklarning potogenezini kompleks o'rganish, shuningdek, uning terapiyasiga nisbatan yangi va samarali yondoshuvlarni ishlab chiqish bo'yicha ma'lumotlar tanqisligi mavjud. Bunday kasalliklarga chalingan bolalarni olib borishning yanada samarali strategiyalarini ishlab chiqishga yordam beruvchi chuqur tadqiqotlar talab etiladi. Shu munosabat bilan BOS kuzatilgan bolalarda sitokinlar statusi va D vitamini ko'rsatkichlarining tashxisiy mezonlarini asoslash muhim ahamiyatga egadir.

Yuqorida bayon etilganlarga asoslanib, bronxial obstruksiyaning oldini olish, tashxislash va davolashda muvaffaqiyatga erishish uchun tibbiy texnologiyalar va yondoshuvlarni yaxshilash ustida doimiy ish olib borish pediatriyaning dolzarb masalalarini belgilaydi. BOS ni erta tashxislash, hamda uning eng ma'qul va kam asoratlanuvchi davolash usullari borasida baxs-munozaralarning hanuzgacha davom etayotganligi, shuningdek, adabiyotlarda mazkur muammo yechimi bo'yicha isbotlangan ma'lumotlarning kamligi tadqiqotning maqsad va vazifalarini belgilab berdi.

Tadqiqot maqsadi: bronxoobstruktiv sindrom kuzatilgan bolalarda nafas olish tizimining funktsional holatini baholash.

Materiallar va usullar. Tadqiqot Andijon viloyati bolalar ko'p tarmoqli tibbiyot markazi Pulmonologiya bo'limida va Respublika ixtisoslashtirilgan Pediatriya ilmiy amaliy tibbiyot markazi Pulmonologiya bo'limida o'tkazildi. Tadqiqotga 7 yoshdan 15 yoshgacha bo'lgan 90 nafar bemor bola jalb qilindi. Nazorat guruhi sifatida xuddi shu yoshdagi 20 nafar amaliy sog'lom bolalar olindi.

Tashqi nafas olish funksiyasini (TNOF) o'rganish SEMA 2000 dasturidan foydalangan holda, SHILLER SRIROVIT SR-1 (Mockva) spirometrida amalga oshirildi. Olingan natijalarni statistik qayta ishlash Statistica 6.0 dasturiy majmuasi yordamida amalga oshirildi.

Natijalar va uning muhokamasi. Bolalardagi bronxoobstruktiv sindromni prognoz qilish, davolash va reabilitatsiya sohasida zarur choralarni belgilash uchun asosiy tashxislash mezonlaridan biri bo'lgan nafas olish tizimining funktsional holatini baholash juda muhimdir.

O'tkazilgan pikfloumetriya tadqiqoti o'tkir obstruktiv bronxit (O'OB) bilan kasallangan bolalarda 80,0% holatlarda NChEYuT me'yordan 80% dan ko'proq qayd etilganini, shu bilan bir vaqtda esa bronxoobstruksiya qaytalanuvchi bronxit (BO li QB) bilan kasallangan bolalarda normativ ko'rsatkichlar 37,6% bolalarda qayd etilganini ko'rsatdi. NChEYuTning me'yordan 80% dan 60% gacha bo'lgan ko'rsatkichlari BO li QB bilan og'rikan 44,1% bolalarda va O'OB bilan og'rikan 11,4% bolalarda qayd etildi ($p < 0,05$).

NChEYuT ning me'yordan 60% dan past bo'lishii ko'pchilik holatlarda (18,3%) BO li QB bilan kasallangan bolalarda, 8,6% holda esa O'OB bilan kasallangan bolalarda qayd etildi. Shuni qayd etmoqchimizki, O'OB bilan kasallangan bolalarda 18,3% holda O'OB ning klinik og'irlashuviga bo'lgan tendensiya kuzatiladi, ya'ni ushbu guruh BO li QB transformatsiyasining xavfiga taalluqlidir (1-jadval).

1-jadval

Tekshirilgan bolalardagi pikfloumetriya ma'lumotlarining tahlil natijalari, (%)

Ko'rsatkich	O'OB (n=40)		BO li QB (n=50)		R
	abs	%	abs	%	
NChEYuT, lozim darajadan 80 %	32	80,0 %	19	37,6 %	<0,001
NChEYuT, lozim darajadan 60-80 %	5	11,4 %	22	44,1 %	<0,05
NChEYuT, lozim darajadan < 60 %	3	8,6 %	9	18,3 %	<0,05

Odatda spiropogrammani obstruktiv va restriktiv tur turlarga bo'linadi, lekin bu ko'rsatkich nisbiy hisoblanadi, chunki ko'plab kasalliklarda obstruktiv va restriktiv tur buzilishlar birgalikda bo'lishi mumkin. Uzoq davom etgan o'pkaning surunkali obstruktiv kasalliklarida o'pka parenximasida patologik jarayon rivojlanishi mumkin, bu esa spirografik ko'rsatkichlarda aks etadi. Bunday rivojlanish mavjud bo'lgan obstruktiv alomatlar fonida restriksiya alomatlarining paydo bo'lishiga olib kelishi mumkin.

Spirometriya yordamida bolalardagi obstruktiv, restriktiv yoki aralash turdagi har xil

ventilyatsion buzilishlar sindromlari aniqlandi. Qizig'i shundaki, O'OB bilan kasallangan bolalarning 25,8%.da o'pkaning hayotiy hajmi va nafas yo'llari o'tkazuvchanligining spirometriya yordamida o'lchangan boshqa ko'rsatkichlari normal qiymatlar chegarasida bo'lgan. Shuni taa'kidlash muhimki, me'yoriy qiymatlar faqat O'OB bilan og'riq bolalar uchun belgilangan, BO li QB bilan kasallangan bolalar uchun esa bunday me'yorlar belgilanmagan (2-jadval).

Ventilyatsiyaning restriktiv buzilishlari o'pkaning cho'zilishini va uning havo bilan to'ladigan hajmini cheklovchi jarayonlar tufayli yuzaga keladi. Bolalar populyatsiyasida restriktiv buzilishlar BO li QB bilan kasallangan bolalarda eng ko'p (12,2%) kuzatiladi. O'pkaning tor nafas yo'llari va havo oqimiga ortib ketgan qarshiligi bilan bog'liq ventilyatsion funksiyasining obstruktiv buzilishlari ham nafas olish a'zolari kasalliklari uchun tipik hisoblanadi.

2-jadval.

Tadqiq etilayotgan guruhlardagi bemorlarning spirometrik ko'rsatkichlari, (%)

Ko'rsatkichlar	O'OB (n=22)		BOli QB (n=47)		R
	abs	%	abs	%	
Me'yor	6	25,8	6	13,4	<0,001
Obstruktiv tur	14	59,6	26	54,4	<0,05
Restriktiv tur	-	-	6	12,2	<0,05
Aralash tur	2	8,2	9	20	<0,05

Guruhlardagi tekshirilgan bolalarning barchasida o'pka ventilyatsiyasi buzilishining obstruktiv turi ustunlik qildi: O'OB – 14 (59,6%), BO li QB da – 26 (54,4%), shuningdek, barcha guruhlarda ventilyatsiya buzilishining yanada pastroq aralash turi qayd etildi: O'OB – 2 (8,2%), BO li QB – 9 (20%).

Tadqiq etilayotgan guruhlardagi tashqi nafas funksiyasining (TNF) kengaytirilgan tahlili 3-jadvalda keltirilgan.

3-jadval.

Tekshirilgan bolalardagi TNF ning qiyosiy tahlili, (M±m)

Parametrlar	Nazorat guruhi (n=20)	O'OB (n=22)	BO li QB (n=90)	P
TNChH1	88,6±1,7	71,3±1,8	65,4±0,65	<0,01
O'HH	87,5±3,1	73,5±2,1	67,3±0,9	<0,01
TNChH1/O'HH (Tiffno indeksi)	80,3±2,1	62,7±1,1	53,3±1,1	<0,01
SHT 25	68,5±1,6	61,6±1,4	60,3±0,7	<0,05
SHT 50	68,5±1,6	58,8±1,2	49,4±0,6	<0,001
SHT 75	68,5±1,6	52,7±1,3	56,1±0,8	<0,05

Izoh: P–I va II guruh bemorlari ko'rsatkichlari o'rtasidagi farqning ishonchligi.

Tekshirilgan bemorlardagi TNF tadqiqotining natijalari turli darajada ifodalangan buzilishlarni aniqlashga imkon berdi.

Olingan ma'lumotlardan ko'rinib turganidek, TNChH1 darajasining BO li QB bilan kasallangan bemorlarda O'OB bilan kasallangan bolalar guruhiga nisbatan ishonchli tarzda 1,1? marta pasayishi kuzatildi (p<0,01).

O'HH darajasini o'rganishda uning O'OB bilan kasallangan bolalar guruhiga nisbatan BO li QB bilan kasallangan bolalarda ishonchli tarzda 1,1 marta pasayishi aniqlandi (p<0,01). Tiffno indeksining BO li QB bilan kasallangan bolalar guruhiga nisbatan 1,3 marta ishonchli tarzda pasayishi kuzatildi (p<0,01).

O'OB bilan kasallangan bolalar guruhiga nisbatan BO li QB bilan kasallangan bolalarda SHT 50 darajasining 1,1 marta ishonchli tarzda pasayishi kuzatildi (p<0,05).

Xulosa. Tadqiqot natijasida O'OB va BO li QB bilan kasallangan bolalarda spirometriyada aniqlanadigan o'pka ventilyatsiyasi funksiyasi buzilishining o'ziga xos turi – bu obstruktiv tur ekanligi oydinlashdi. O'tkazilgan tadqiqotlarga asoslangan holda ko'pchilik bolalarda O'HH va Tiffno indeksining pasayishi aniqlandi, bu esa bronxlar o'tkazuvchanligi buzilishining alomati hisoblanadi. Bu buzilish odatda bronxlar va o'pkalardagi yallig'lanishli o'zgarishlar bilan chaqirilganidir.

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