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## Bolalarda allergik rinit va bronxial astmaning komorbid kechishida klinik belgilarning xususiyatlari

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### Annotatsiya.

**Kirish.** Allergik rinit va bronxial astma bolalar orasida keng tarqalgan, o'zaro patogenetik jihatdan bog'liq bo'lgan allergik kasalliklar qatoriga kiradi. Ushbu kasalliklarning komorbid kechishi klinik simptomlarning og'irroq namoyon bo'lishiga, kasallik nazoratining qiyinlashishiga va bemorlar hayot sifati pasayishiga olib kelishi mumkin. **Tadqiqotning maqsadi** bolalarda allergik rinitning bronxial astma bilan komorbid kechgan holatlarida klinik belgilarning xususiyatlarini o'rganishdan iborat. **Materiallar va tadqiqot usullari.** Tadqiqot Toshkent davlat tibbiyot universiteti ko'p tarmoqli klinikasi bolalar allergologiya bo'limida o'tkazildi. Tekshiruvdagi bemorlarning yoshi 7 - 18, o'rtacha yoshi esa  $10,1 \pm 0,31$  tashkil etdi. 1-guruxda allergik rinitning bronxial astma bilan komorbid kechgan  $n=100$  nafar bemor bolalar, 2-guruxda allergik rinit bilan og'rigan  $n=50$  nafar, shundan 2a - intermittirlovchi AR (IAR) ( $n=24$ ) va 2b- persistirlovchi AR (PAR) ( $n=26$ ) guruxchalarga bo'lindi. Tadqiqotda allergik rinit va bronxial astma bilan kasallangan bolalarda asosiy klinik simptomlar, ularning uchrash chastotasi, namoyon bo'lish darajasi va o'zaro bog'liqligi tahlil qilindi. **Natijalar va ularning muhokamasi:** Burun bitishi 1-guruhdagi AR bilan BA birgalikda kechgan bemorlarda - 72 (72%) ta, intermittirlovchi AR (IAR) bilan 2 a guruhchada - 15 nafar (62,5%), persistirlovchi AR (PAR) bilan 2 b guruhchada - 17 (65,3%) ta bemorlarda aniqlandi ( $p<0,001$ ). Rinoreya 1 guruhda 59 (59%) va 2 a guruxchadagi IAR li 12 (50%) ta bemorlarda doimiy ya'ni kunduzi va kechasi (4 ball) kuzatiladigan rinoreya ko'p uchradi ( $r<0,01$ ). 2 b -guruhchada PAR bilan og'rigan bolalarning 15 (57,6%) nafar bemorlarda kam kuzatiladigan rinoreya (2 ball) ko'proq kuzatildi ( $r<0,01$ ). Aksirish AR+BA bo'lgan 43% bemorlarda o'rtacha darajada va 39% hollarda sezilarli darajada aksirish kasallik bilan birga kechgan, intensivligi PAR guruhchasiga to'g'ri keladi, bu nafas a'zolarining allergik sezgirlikning kuchayishi yallig'lanish jarayonining mavjudligi bilan ham bog'liq deb izohlandi. **Hulosalar:** Olingan natijalar allergik rinit va bronxial astmaning birga kechishi bolalarda kasallikning klinik manzarasini og'irlashtirishini va bunday bemorlarda erta tashxis hamda kompleks yondashuv zarurligini ko'rsatadi.

**Kalit so'zlar:** bolalar, allergik rinit, bronxial astma, komorbidlik, klinik belgilar, allergik kasalliklar, simptomlar, diagnostika.

## Characteristics of Clinical Signs in the Comorbid Course of Allergic Rhinitis and Bronchial Asthma in Children

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### Abstract.

**Introduction.** Allergic rhinitis and bronchial asthma are among the most common allergic diseases in children and are pathogenetically interrelated. The comorbid course of these diseases may lead to more severe clinical manifestations, difficulties in disease control, and a reduction in patients' quality of life. **The aim of the study** was to investigate the characteristics of clinical signs in children with allergic rhinitis comorbid with bronchial asthma. **Materials and methods.** The study was conducted at the Department of Pediatric Allergology of the multidisciplinary clinic of Tashkent State Medical University. The age of the examined patients ranged from 7 to 18 years, with a mean age of  $10.1 \pm 0.31$  years. Group 1 included 100 children with comorbid allergic rhinitis and bronchial asthma. Group 2 included 50 children with allergic rhinitis, of whom subgroup 2a consisted of 24 patients with intermittent allergic rhinitis (IAR), and subgroup 2b consisted of 26 patients with persistent allergic rhinitis (PAR). The main clinical symptoms, their frequency, severity, and

interrelationships were analyzed in children with allergic rhinitis and bronchial asthma. **Results and discussion.** Nasal obstruction was identified in 72 patients (72%) in Group 1 with combined allergic rhinitis and bronchial asthma, in 15 patients (62.5%) in subgroup 2a with intermittent allergic rhinitis, and in 17 patients (65.3%) in subgroup 2b with persistent allergic rhinitis ( $p < 0.001$ ). Rhinorrhea was most frequently observed as persistent, occurring both during the day and at night (4 points), in 59 patients (59%) of Group 1 and in 12 patients (50%) of subgroup 2a with intermittent allergic rhinitis ( $p < 0.01$ ). In subgroup 2b, among children with persistent allergic rhinitis, less frequent rhinorrhea (2 points) was more commonly observed in 15 patients (57.6%) ( $p < 0.01$ ). Sneezing in patients with allergic rhinitis and bronchial asthma was of moderate severity in 43% of cases and marked severity in 39% of cases. Its intensity corresponded to that observed in the persistent allergic rhinitis subgroup, which may be explained by increased allergic sensitivity of the respiratory tract and the presence of an inflammatory process. **Conclusions.** The obtained results indicate that the coexistence of allergic rhinitis and bronchial asthma aggravates the clinical picture of the disease in children and demonstrates the need for early diagnosis and a comprehensive approach in the management of such patients.

**Key words:** children, allergic rhinitis, bronchial asthma, comorbidity, clinical signs, allergic diseases, symptoms, diagnosis.

**Kirish.** Allergik rinit - bu burun shilliq qavatining allergenlar ta'sirida yallig'lanishi bo'lib, bolalar orasida eng ko'p uchraydigan allergik kasalliklardan biri hisoblanadi. Jaxon Sog'liqni saqlash ma'lumotlariga ko'ra allergik kasalliklardan allergik rinit so'nggi o'n yilliklarda jahon miqyosida barqaror o'sish tendensiyasiga ega. Allergik rinit ko'p hollarda bronxial bilan uyg'un holda kechadi va uning rivojlanish xavfini oshiradi. Bu esa kasallikning allergologik muammo sifatida dolzarbligini belgilaydi. Dunyo bo'ylab bolalarning 10–25%i allergik rinit bilan kasallangan, ayrim sanoati rivojlangan mamlakatlarda bu ko'rsatkich 30–40% gacha yetadi [1-4]. Maktab yoshidagi bolalarda kasallikning tarqalishi ayniqsa yuqori bo'lib, bu ta'lim jarayoniga salbiy ta'sir ko'rsatadi. Allergik rinit bolalarda uyqu buzilishi, diqqat pasayishi, xotira susayishi, maktab o'zlashtirish ko'rsatkichlarining pasayishiga olib keladi. Shuningdek, tez-tez ORVI bilan kasallanish, sinusit va otit kabi asoratlarni rivojlanishi xavfini oshiradi. Davolash va profilaktika xarajatlari esa oila va sog'liqni saqlash tizimi uchun qo'shimcha iqtisodiy yuk hisoblanadi [5-7]. Kasallikning erta tashxis qilinishi va davolanishi bronxial astma rivojlanishining oldini olishda muhim ahamiyatga ega [8].

**Tadqiqot maqsadi.** Bolalarda allergik rinitning bronxial astma bilan komorbid kechgan bemorlarda klinik belgilarning xususiyatlari o'rganish.

**Materiallar va tadqiqot usullari.** Tadqiqot Toshkent davlat tibbiyot universiteti ko'p tarmoqli klinikasi bolalar allergologiya bo'limida o'tkazildi. Allergik rinit va bronxial astma tashxisi umumiy qabul qilingan standartlarga muvofiq amalga oshirildi ya'ni kasallikning klinik ko'rinishi, allergologik anamnez, laboratoriya ma'lumotlari tekshiruvlar (umumiy qon taxlili, qon zardobida umumiy IgE va maxsus IgE antitelalari), teri skarifikatsion testi, rinoskopiya, spirometriya, pikfloumetriya va boshqa tekshiruvlar natijalaridan so'ng qo'yilgan. Tekshiruvdagi bemorlarning yoshi 7 - 18, o'rtacha yoshi esa  $10,1 \pm 0,31$  tashkil etdi. 1-guruxda allergik rinitning bronxial astma bilan komorbid kechgan 100 nafar bemor bolalar, 2-guruxda allergik rinit bilan og'rigan 50 nafar, shundan 2a - intermitterlovchi AR (IAR) ( $n=24$ ) va 2b- persistirlovchi AR (PAR) ( $n=26$ ) guruxchalarga bo'lindi.

Burun bitishi bolalarda ARning asosiy belgilaridan biridir [2,5,9]. Bolalarda ARning turli nozologik shakllarida burun bitishi og'irlik darajasi (ARIA) shkalasi bo'yicha 4 ballik tizimda baholash amalga oshirildi. Baholash tizimi quyidagicha baholandi [7]: 0 ball - erkin burun bilan nafas olish. 1 ball - burun bilan nafas olishda yengil qiyinchilik. 2 ball - bolaning faoliyatiga ta'sir qilmaydigan yengil burun bitishi. 3 ball - faolligi buzilmagan holda sezilarli burun bitishi. 4 ball - faolligi buzilgan holda sezilarli burun bitishidan to nafas burundan umuman nafas ololmaslik.

Baholash davomida barcha uch guruhdagi bemorlarning ko'pchiligida nafas olishning sezilarli darajada buzilishi va bemorning faolligi buzilgan holda sezilarli burun bitishidan to burundan umuman nafas ololmaslik (4 ball) ya'ni: 1-guruhdagi AR bilan BA birgalikda kechgan bemorlarda - 72 (72%) ta, intermitterlovchi AR (IAR) bilan 2 a guruhchada - 15 nafar (62,5%), persistirlovchi AR (PAR) bilan 2 b guruhchada - 17 (65,3%) ta bemorlarda aniqlandi ( $p < 0,001$ ), (1-jadval).

**1-jadval.** Allergik rinitning turli nozologik guruxli va komorbidli bemorlarda burun bitishi og'irligini baholash.

**Table-1.** Evaluation of the severity of nasal congestion in patients with different nosological groups of allergic rhinitis and comorbidities.

Ballar	1 ball	2 ball	3 ball	4 ball
1 gurux (AR +BA), (n=100)	7 (7%)	9 (9%)	12 (12%)	72 (72%) *
2 a gurux IAR (n=24)	-	4 (16,6%)	5 (20,9 %)	15 (62,5%) *
2 b gurux PAR (n=26)	-	3 (11,5%)	6 (23,2 %)	17 (65,3%) *

**Eslatma:** \*-  $r < 0,001$ . guruh ichidagi farqlarning ahamiyati.

AR ning turli shakllari bilan kasallangan bolalarda burundan nafas olishning qiyinlashishi kuzatilishi bemorlarda va ularning oilasida hayot sifatini sezilarli darajada yomonlashishiga sabab bo'ladi [1,8,13].

IAR va PAR bo'lgan guruhlar o'rtasida burun bitishining og'irligini solishtirganda, PAR bilan og'rikan bemorlarda burun orqali nafas olish buzilishining og'ir darajasi sezilarli darajada qayd etildi ( $r < 0,01$ ). ARni BA bilan komorbid kechishi kuzatilgan bemorlarni PAR guruxi bilan solishtirganda, burun bitishining og'irlik darajasida deyarli farqlar topilmadi ( $r > 0,05$ ).

Bolalarda ARning turli shakllarida yuzaga keladigan ikkinchi klinik belgi – rinoreya [9,10]. Ushbu alomat ham 4 ball tizimda quyidagicha baholandi (2-jadval): 1 ball - rinoreya yo'q; 2 ball – rinoreya kam kuzatiladi; 3 ball - rinoreya sezilarli kuzatiladi; 4 ball - doimiy rinoreya.

**2-jadval.** Allergik rinitning turli nozologik guruxli va komorbidli bemorlarda rinoreyaning og'irligini baholash.

**Table-2.** Assessment of the severity of rhinorrhea in patients with different nosological groups of allergic rhinitis and comorbidities.

Tekshiruv guruxlari/Ballar	1 ball	2 ball	3 ball	4 ball
1 gurux (AR +BA), (n=100)	6 (6%)	15 (15 %)	20 (20 %)	59 (59,0 %) *
2 a gurux IAR (n=24)	2 (8, 4%)	4 (16,6%) *	6 (25%)	12 (50%)
2 b gurux PAR (n=26)	4 (15,4%)	15 (57,6%) *	7 (30%)	-

**Eslatma:** \*-  $p < 0,001$ . guruh ichidagi farqlarning ahamiyati.

AR+BA bilan og'rikan bolalarning 1 guruhida 59 (59%) va 2 a guruxchadagi IAR li 12 (50%) ta bemorlarda doimiy ya'ni kunduzi va kechasi (4 ball) kuzatiladigan rinoreya ko'p uchradi ( $r < 0,01$ ). 2 b -guruhchada PAR bilan og'rikan bolalarning 15 (57,6%) nafar bemorlarda kam kuzatiladigan rinoreya (2 ball) ko'proq kuzatildi ( $r < 0,01$ ).

Rinoreya tabiatiga ko'ra, AR+BA komorbid 1-guruhda quyidagicha farq qildi: suvli-seroz 22 (22%), yopishqoq shilliq - 64 (64%), shilliq yiringli tabiat - 8 (8%) ta va 6 (6%) nafar bemorlarda rinoreya aniqlanmadi. IAR li 2 a guruxchada (19) 79,1% hollarda suvli-seroz ajralma va (3) 12,5% hollarda yopishqoq shilliq ajralma aniqlandi ( $r < 0,001$ ). PAR bilan 2 b-guruhchada bolalarning ko'pchiligida 21 (80,7%) yopishqoq shilliq ajralma ( $r < 0,001$ ) kuzatildi [1,5].

Shunday qilib IAR bilan 50% hollarda rinoreya doimiy xarakterga ega va 79,1% hollarda suvli-seroz ajralma bo'lgan, bu gullash davrida gulchaglarning sezgirligi oshishi bilan izohlanadi va ARning og'ir darajasini tavsiflaydi. PAR bilan bemorlarning ko'pchiligida (57,6%) kam kuzatiladigan rinoreya qayd etildi, 80,7% hollarda yopishqoq shilliq ajralma ajralishi bilan kuzatilishi ARning surunkali kechishini ko'rsatadi. AR+BAda 59,0% hollarda doimiy kuzatiladigan rinoreya, 64% hollarda yopishqoq shilliq tabiatli ajralma suvli-seroz va shilliq yiringli ajralmadan ustunlik qilishi allergik va yallig'lanish jarayonlari fonida surunkali kechishini tasdiqladi. Guruhlar orasidagi 4 ballik rinoreya ustunligini solishtirganda, yuqori ishonchlik AR+BA bilan 1-guruhda tasdiqlandi ( $r < 0,001$ ), (1-rasm).

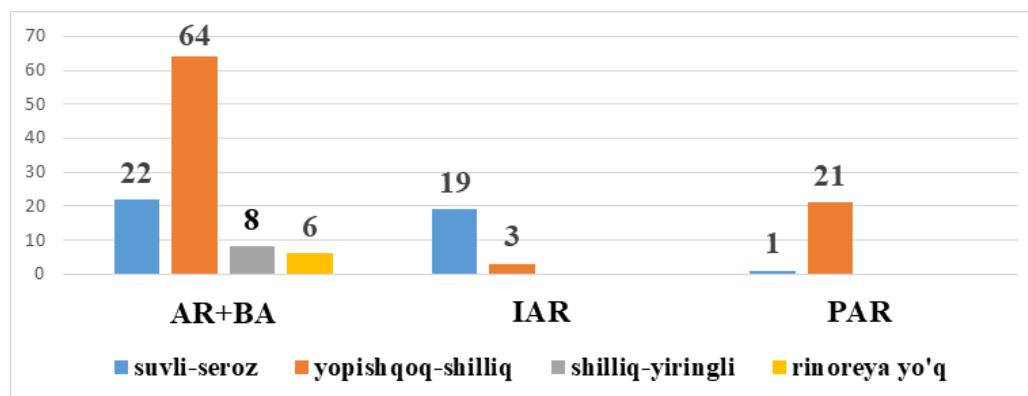
ARDagi klinik belgilarning uchinchi aksirishdir [11,12]. Ushbu alomat kasallikning kuchayishi davrida aksirishlar soniga ko'ra 4 balli tizimda baholandi. 1 ball - kuniga 5

martagacha aksirish; 2 ball - kuniga 5 dan 10 martagacha; 3 ball - kuniga 10 dan 20 martagacha; 4 ball - kuniga 20 yoki undan ko'p marta.

1-guruhdagi AR bilan BA komorbid kechgan bemorlarning 43 (43%) nafarida aksirish 3 ballga baholandi. 2a-guruhdagi IAR bilan og'riq bemorlarning 13 (54,1%) nafar bolalarda kuniga 20 martadan ortiq aksirish (4 ball) kun davomida, kechasi va ertalab gulchaglarning eng yuqori konsentratsiyasi maksimal cho'qqisiga yetganda bezovta qilishi aniqlandi ( $r < 0,001$ ). 6 (25,0%) ta bemorni kunduzi va kechqurun 20 martagacha (3 ball) aksirish bezovta qilgan. 4 (16,6%) ta bemor kun davomida kuniga 5 dan 10 marta (2 ball) allergen bilan aloqa-kontaktida bo'lganda aksirishi kuzatildi. 2b-guruhdagi PAR bilan og'riq bemorlarning - 10 (38,4%) nafarida aksirish 3 ballga va 11 (42,3%) ta bolalarda va 1-guruhdagi AR+BA birgalikda kelgan 39 (39%) nafar bemorlarda aksirish 4 ballga baholandi. Guruh ichida aksirish ustunligidagi (4 va 3 ball) farqlar topilmadi ( $r > 0,05$ ) (3-jadval).

**1-rasm.** Komorbidli va allergik rinitning turli nozologik guruxli bemorlarda rinoreyaning tabiati.

**Figure 1.** The nature of rhinorrhea in patients with comorbid and allergic rhinitis of different nosological groups.



**3-jadval.** Komorbidli va allergik rinitning turli nozologik guruxli bemorlarda aksirishning og'irligini baholash.

**Table-3.** Assessment of the severity of sneezing in patients with comorbidities and different nosological groups of allergic rhinitis.

Tekshiruv guruxlari/Ballar	1 ball	2 ball	3 ball	4 ball
1 gurux (AR+BA), (n=100)	3 (3%)	15 (15%)	43 (43%)	39 (39%)
2 a gurux IAR (n=24)	1 (4.1%)	4 (16,6%)	6 (25%)	13 (54,1%) *
2 b gurux PAR (n=26)	-	5(19,3%)	10 (38,4%)	11 (42,3%)

**Eslatma:** \*-  $r < 0,001$ . gurux ichidagi farqlarning ahamiyati.

Shunday qilib aksirish ARning majburiy alomati bo'lib barcha guruh bemorlarda aniqlandi ( $r > 0,05$ ). AR+BA bo'lgan 43% bemorlarda o'rtacha darajada va 39% hollarda sezilarli darajada aksirish kasallik bilan birga kechgan, intensivligi PAR guruhchasiga to'g'ri keladi, bu nafas a'zolarining allergik sezgirlikning kuchayishi yallig'lanish jarayonining mavjudligi bilan ham bog'liq deb izohlandi. IAR bilan kasallangan bemorlarning 16,6%-54,1% da turli xil intensivlikdagi aksirish sodir bo'lgan va kechayu-kunduzda 20 martadan ko'p kuzatilishi rinitning ushbu shaklida boshqa shakllarga nisbatan yaqqol namoyon bo'ldi. PAR bilan og'riq bemorlarning kuniga 20 martagacha (38,4%) va undan ko'p (42,3% hollarda) aksirishi kuzatildi, bu yil davomida, kunduzi va kechasi, ayniqsa gulchaglar va uy xo'jalik allergenlariga sensibilizatsiya qayd etilgan davrlarda tez-tez sodir bo'lgan, bu esa asosiy kasallikning kechishini og'irlashtirgan[11].

ARning turli nozologik shakllari bo'lgan bolalarda to'rtinchi simptom kasallikning kuchayishi davrida burun bo'shlig'ida qichishish bo'lib, bu kasallikning klinik ko'rinishida ham muhim rol o'ynadi[4,8,11]. Ushbu belgi ham 4 balllik tizim bo'yicha baholandi:1 ball - bezovta qilmaydi; 2 ball - kamdan-kam; 3 ball - o'rtacha 4 ball - doimiy (4-jadval).

**4-jadval.** Komorbidli va allergik rinitning turli nozologik guruxli bemorlarda burun qichishining og'irligini baholash.

**Table-4.** Assessment of the severity of nasal itching in patients with comorbidities and different nosological groups of allergic rhinitis.

Guruxlar/Ballar	1 ball	2 ball	3 ball	4 ball
1 gurux (AR +BA), (n=100)	3 (3,0%)	15 (15%)	19 (19%)	63 (63%) *
2 a gurux IAR (n=24)	-	5 (20,8%)	5 (20,8%)	14 (58,4%) *
2 b gurux PAR (n=26)	-	1(3,8%)	4 (15,4%)	21 (80,8%) **

**Eslatma:** \*-  $r < 0,001$ , guruh ichidagi farqlarning ahamiyati; \*\*  $r < 0,05$ , guruhlarda orasidagi farqlarning ahamiyati.

Burunda doimiy qichishish (4 ball) AR+BAli 1-guruhda 63 (63%), IARli 2a-guruxchada 14 (58,4%) va 2b-guruhchada PARda 21 (80,8%) bemorlarda kuzatildi ( $r < 0,01$ ). IARli 2a-guruhchadagi bemorlarda bu jarayon doimiy gulchanglar sensibilizatsiyasi hamda yuqori va o'rta obligat oziq-ovqatlar iste'moli natijasida o'zaro kesishuv reaksiyasini keltirib chiqarganligi bilan izohlandi. 1 gurux va 2b-guruhchada burunning qichishishi kunduzi va kechki vaqtlarda gulchanglar, maishiy va uy chanlariga sezgirli va oziq-ovqat tarkibida obligat allergenlarni bo'lishi natijasida kuzatildi [12].

**Natijalar va ularning muhokamasi:** Burun bitishi 1-guruhdagi AR bilan BA birgalikda kechgan bemorlarda - 72 (72%) ta, intermitterlovchi AR (IAR) bilan 2 a guruhchada - 15 nafar (62,5%), persistirlovchi AR (PAR) bilan 2 b guruhchada - 17 (65,3%) ta bemorlarda aniqlandi ( $p < 0,001$ ). Rinoreya 1 guruhda 59 (59%) va 2 a guruhchadagi IAR li 12 (50%) ta bemorlarda doimiy ya'ni kunduzi va kechasi (4 ball) kuzatiladigan rinoreya ko'p uchradi ( $r < 0,01$ ). 2 b -guruhchada PAR bilan og'rigan bolalarning 15 (57,6%) nafar bemorlarda kam kuzatiladigan rinoreya (2 ball) ko'proq kuzatildi ( $r < 0,01$ ). Aksirish AR+BA bo'lgan 43% bemorlarda o'rtacha darajada va 39% hollarda sezilarli darajada aksirish kasallik bilan birga kechgan, intensivligi PAR guruhchasiga to'g'ri keladi, bu nafas a'zolarining allergik sezgirlikning kuchayishi yallig'lanish jarayonining mavjudligi bilan ham bog'liq deb izohlandi. Rinoreya AR+BA bilan og'rigan bolalarning 1 guruhida 59 (59%) va 2 a guruhchadagi IAR li 12 (50%) ta bemorlarda doimiy ya'ni kunduzi va kechasi (4 ball) kuzatiladigan rinoreya ko'p uchradi ( $r < 0,01$ ). 2 b -guruhchada PAR bilan og'rigan bolalarning 15 (57,6%) nafar bemorlarda kam kuzatiladigan rinoreya (2 ball) ko'proq kuzatildi. Har uch guruhda doimiy burun bo'shlig'ining qichishi kuzatildi (63,0%, 58,4%, 80,8%), shundan PAR bilan kasallangan bemorlarda yuqori (80,8%) va yil davomida bo'lishi qayd etildi ( $r < 0,05$ ). IARda doimiy qichishish (58,4%) gulchanglariga nisbatan sensibilizatsiyasi natijasida yuzaga kelgan. AR+BA bemorlarida bu belgi (63,0%) gulchangiga sensibilizatsiya bilan birgalikda yallig'lanish jarayoni ham ishtrokida kuzatildi.

**Xulosalar:** Allergik rinitning barcha shakllarining klinik ko'rinishi asosiy va qo'shimcha simptomlar majmuasi bilan tavsiflanadi, ularning zo'rayishi va davomiyli va kasallikning og'irligini va ARning turli shakllarining xususiyatlarini aks ettiradi, bu ularni AR ning turli shakllariga tegishli bo'lishiga imkon beradi. Gumoral holatni tahlil qilganda mahalliy immunologik tizimning faollashishi AR va BA bilan og'rigan bemorlarda allergenlar tomonidan sensibilizatsiya kuchayishi tufayli IgA ning ortishi qayd etildi ( $r < 0,001$ ). Immunitet tanqisligi maktabda va o'smirlik davridagi bolalarda AR+BA li bemorlarda allergenlar bilan uzoq vaqt kontaktda bo'lish natijasida IgA va IgJ darajasini kamayishi bilan nomoyon bo'ldi ( $r < 0,001$ ). AR bilan kasallangan guruhda kasallikni keltirib chiqargan allergenlarni aniqlashda begona o'tlar (72,5%), boshqoqli o'tlar (60,0%) allergenlariga sensibilizatsiya ustunlik qildi, ikkinchi o'rinda daraxt gulchanglariga moyilligi (17,5%) bo'ldi. AR+BA komorbid kechgan guruxda begona o'tlar allergenlariga sensibilizatsiya 57,6% ni, donli allergenlarga - 51,5%, maishiy allergenlar-18,6% va epidermal allergenlarni daraxt gulchangi bilan birgalikda kuzatilishi 9,1% ni tashkil etdi. Kasallikning avj olish soni va mavsumiyli har bir holatda etiologik ahamiyatga ega bo'lgan allergen turiga bog'liq bo'ldi.

**Tadqiqot shaffofligi.** Tadqiqot homiylik qilinmagan. Qo'lyozmaning yakuniy versiyasini nashrga taqdim etish uchun faqat mualliflar javobgardir.

**Moliyaviy va boshqa munosabatlarni oshkor qilish.**

Barcha mualliflar tadqiqotning konsepsiyasi va dizaynida hamda qo'lyozmani yozishda ishtirok etishdi. Qo'lyozmaning yakuniy versiyasi barcha mualliflar tomonidan ma'qullangan.

Mualliflar tadqiqot uchun hech qanday to'lov olmaganlar.

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