го количественного состава. Выявленные прямые корреляции между объемом тромбоцитов и маркерами воспаления (фибриноген, СРБ, СОЭ) подтверждают тесную взаимосвязь воспалительного процесса с изменением качественных характеристик клеток [4]. Установлено, что одним из ключевых активаторов агрегации служат ЦИК, уровень которых ассоциирован как с показателями агрегационной активности тромбоцитов, так и с долей крупных форм [5]. Полученные данные свидетельствуют о том, что морфологические сдвиги являются более значимыми индикаторами патологии, чем наличие тромбоцитоза или тромбоцитопении. Полученные данные дают основание полагать, что MPV и PDW могут рассматриваться как дополнительные маркеры в оценке воспаления и риска тромбообразования у данной категории пациентов.

Выводы:

1. У пациентов с ГВ наблюдается значительное увеличение максимальной степени, времени и скорости агрегации тромбоцитов в сравнении с контрольной группой ($p<0,05$).

2. На фоне нормального количества тромбоцитов и тромбокрита выявлено достоверное увеличение среднего объема (MPV), ширины распределения (PDW) и доли крупных форм тромбоцитов (P-LCR) ($p=0,000005$, $p=0,000004$ и $p=0,000004$ соответственно).

3. Установлены прямые сильные корреляционные связи между морфологическими индексами (MPV, PDW) и основными маркерами воспаления (уровнями фибриногена, СРБ и СОЭ).

4. Уровень ЦИК прямо ассоциирован с показателями агрегационной способности и содержанием крупных форм тромбоцитов ($r=0,91$; $p=0,0004$ для степени агрегации; $r=0,66$; $p=0,049$ для скорости агрегации; $r=0,81$; $p=0,0069$ для P-LCR).

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SENSITIZATION SPECTRUM OF PET ALLERGENS IN CHILDREN

Introduction

Allergic diseases represent a significant global health burden, often triggered by exposure to aeroallergens. Among these, epithelial allergens from domestic and farm animals are common

causes of sensitization, leading to a spectrum of clinical manifestations. These allergens are predominantly found in the dander, saliva, urine, and fur of animals, becoming airborne and persisting in indoor environments. Exposure to cat epithelium (allergen E1) is a primary risk factor for the development of asthma and allergic rhinitis, with symptoms including sneezing, rhinorrhea, nasal congestion, and bronchial constriction. Allergens from horse and dog epithelia can provoke similar respiratory symptoms, including conjunctivitis and exacerbation of asthma, particularly in individuals with occupational or recreational exposure [1, 2]. Sensitization to smaller mammals, such as guinea pig, hamster, rabbit, and rat epithelia, is often associated with both respiratory symptoms (rhinitis, asthma) and cutaneous manifestations (urticaria, atopic dermatitis), especially in laboratory workers and pet owners. Understanding the prevalence and intensity of sensitization to these allergens is crucial for patient management. It is also important for environmental control advice and the development of targeted strategies.

Sensitization to these allergens is primarily determined through the detection and quantification of serum-specific Immunoglobulin E (sIgE) antibodies, a key biomarker of type I hypersensitivity. The presence of sIgE against specific epithelial proteins confirms an individual's immune system has recognized and mounted an allergic response to that allergen. The concentration of sIgE, measured in IU/ml, shows the severity of clinical reactions, with higher levels indicating a greater probability of symptomatic allergic disease [3, 4]. Considering the critical influence of early sensitization on the 'allergic march' and the developing immune system, evaluating these markers in the pediatric population is of particular relevance.

Goal

The primary objective is to study the level and patterns of sensitization to epithelial allergens of domestic animals in children of the Gomel region

Material and methods of research

The study included 90 patients (55 males and 35 females) aged 2 to 18 years, who were examined at the Gomel Regional Children's Clinical Hospital from January to December 2024. The inclusion criteria were suspected allergic conditions, including rhinitis, bronchial asthma, atopic dermatitis, and conjunctivitis. Serum levels of specific Immunoglobulin E (sIgE) were measured by immunoblotting using a respiratory panel. Sensitization to seven epithelial allergens was assessed: cat, horse, dog, hamster, guinea pig, rabbit, and rat. The results were quantified in IU/ml and classified into sensitization classes based on standard ranges: Class 0 – absent [0.00–0.34 IU/ml]; Class 1 – low [0.35–0.69 IU/ml]; Class 2 – moderate [0.70–3.49 IU/ml]; Class 3 – high [3.50–17.49 IU/ml]; Class 4 – very high [17.5–49.9 IU/ml]; Class 5 – extremely high [50.0–100.0 IU/ml]; and Class 6 – ultra-high [>100 IU/ml]. Sensitization was defined as a result of Class 1 or higher. Statistical analysis was performed using the "Statistica" 12.5 software package. Frequency analysis was conducted to determine the prevalence of sensitization.

The results of the research and their discussion

Analysis of the distribution of specific IgE levels (Table 1) revealed that rat allergens (42 cases, 46.6%) and cat allergens (31 cases, 34.4%) occupied the leading positions in terms of prevalence. Notably, the rat allergen was characterized by a high frequency of significant sIgE levels: in 35 patients (83.3% of sensitized individuals), levels exceeded 0.70 IU/ml, and in 15 (42.8%), they exceeded 3.5 IU/ml. In contrast, sensitization to dog and horse allergens was registered less frequently (18.8% and 11.1%, respectively) and was characterized by lower antibody concentrations. For instance, no patient sensitized to horse reached the threshold value of 3.5 IU/ml.

The results obtained demonstrate that rat and cat allergens play a leading role in sensitization among the examined patients, not only dominating in prevalence but also accounting for the

largest proportion of extreme sensitization cases. The high intensity of the immune response to these allergens correlates with the risk of developing severe respiratory symptoms, which is likely due to the continuous nature of contact in domestic settings (for cats) or hidden exposure and cross-reactivity (for rats). Conversely, sensitization to dog and horse allergens was less frequent and characterized by lower sIgE concentrations, which may be explained by the episodic nature of exposure outside the home. Of particular note is the fact that rare allergens (hamster, rabbit), despite their low overall prevalence, provoked extremely high antibody levels in isolated cases. This indicates a high sensitizing potential of these proteins and justifies the need to include these allergens in in-depth screening programs for accurate assessment of individual risks.

Table 1 – Samples indicating patients with levels of sIgE

Allergen	Positive sample rate, IU/ml											
	>0.35		>0.70		>3.5		>17.5		>50		>100	
	n	%	n	%	n	%	n	%	n	%	n	%
Cat	31	34.4	27	87	15	55	7	46.6	1	14.2	0	0
Horse	10	11.11	6	60	0	0	0	0	0	0	0	0
Dog	17	18.8	8	47.05	2	25	0	0	0	0	0	0
Guinea Pig	2	2.2	1	50	0	0	0	0	0	0	0	0
Hamster	7	7.7	5	71.4	1	20	1	100	0	0	0	0
Rabbit	1	1.11	1	100	1	100	0	0	0	0	0	0
Rat	42	46.6	35	83.3	15	42.8	6	40	1	16.6	0	0

Conclusions

Based on the analysis of specific IgE levels in 90 patients, a pronounced dominance of rat (46.6%) and cat (34.4%) epithelial allergens can be concluded in the sensitization structure of the pediatric population of the Gomel region. A distinctive feature of these allergens is their ability to induce high antibody levels (extreme sensitization), which is associated with a more severe course of allergic diseases and a high risk of developing bronchial asthma. The obtained data justify the necessity of including rodent allergens in standard diagnostic panels and emphasize the importance of patient education regarding home environment control.

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