INVESTIGATIONS OF FIBRINOGEN/FIBRIN DEGRADATION PRODUCTS (FDP) IN ALLERGIC DISEASES

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Communications about fibrinolysis activation in allergic diseases go back a long way. Reactions antigen-antibody induce an intravascular coagulation followed by fibrinolysis in clinical and experimental conditions (1, 11). There is even a parallelism between the degree of this proteolysis and the severity of the allergic reactions. One observes plasminogen/plasmin system activation accompanied by consumption of coagulation factors and FDP entrance into the circulation in an experimental model of anaphylactic shock (6, 7). On the basis of these results certain authors use inhibitors of fibrinolysis in the treatment of allergic diseases (3). There are reports about changes of the fibrinolytic blood activity in such conditions. However, observations on FDP level are rather scanty in these diseases. That is why we decided to study the values of these products together with the level of soluble fibrin monomeric complexes (FMC) and of the fibrinolytic activity of the blood in various allergic diseases.

Material and methods

Our investigation covered 38 patients with allergic diseases. Patients with drug-induced allergy and different skin manifestations such as: allergic dermatitis, erythema exudativum multiforme, urticaria, Quincke's oedema, serum disease, allergic shock, predominated within the contingent examined. Broad-spectrum antibiotics prevailed amids drugs. There were a few cases of allergy caused by analgin, bromates, and iodine contrast media. Investigations of patients were performed at the onset immediately after hospitalization before administration of corticosteroid therapy.

FDP were quantitatively determined in the serum by using of Merskey's et al. (1966) immunological method, FMC — after Lipinski et al. (1968) and fibrinolytic activity (FA) by means of euglobulinolysis (2).

Results and discussion

Our data obtained were demonstrated on table 1. It could be seen that mean FDP and FMC levels increased statistically significantly while FA did not change. These indices were examined once more in all the patients after disappearing of the allergic manifestations. The time lag between primary and secondary examinations varied in accordance with the nature of the disease. These indices returned to normal. The rest coagulogram parameters were within normal ranges although some of them showed statistically reliable differences in comparison with these of healthy persons.

We observed an excessive increase of FDP up to 640 mg/l, of FMC up to 1.4 OU, of fibrinogen up to 1.43 g/l, and thrombocytes up to 190.10⁹/l in one case

Table 1

Indexes in allergic diseases

Indexes	Allergic diseases n=38 x±d		Healthy n=35 x±d
	at the onset	after disappearing of the clinical manifestations	
FDP mg/l	14.750±4.264 p<0.001	4.290±0.978 p<0.1	3.573±0.595
FMC OU	0.569±0.032 p<0.001	0.326±0.034 p>0.1	0.337±0.024
FA min	218.936±7.952 p>0.10	228.425±9.235 p>0.10	213.771±10.276
Fibrinogen g/l	4.29±0.94 p<0.001	3.463±0.334 p<0.01	2.977±0.154
Thrombocytes x . 10^9/l	235.85±22.316 p<0.01	232.25±19.55 p<0.01	214.85±10.83
Prothrombin activity (%)	100.510±6.59 p>0.1	99.580±4.730 p>0.1	102.642±5.517
Bleeding time (sec)	137.80±18.120 p<0.001	151.92±19.740 p<0.01	180.840±24.660
Coagulation time	193.200±27.480 p<0.05	210.60±24.720 p>0.1	220.440±18.900

with severe allergic shock and fatal outcome. The necropsy examination revealed a disseminated intravascular coagulation pattern. This only case was with excessively high FDP levels that could sharply alter the results from the statistical processing of the data of the whole group, indeed. That is why this case was not included when the aforementioned data were calculated.

The results of the correlation analysis demonstrated a strongly positive correlation between FDP and FMC (coefficient 0.8376). However, the coefficients between FDP and fibrinogen and FDP and thrombocyte count as well (0.2526 and-0.2382, respectively), were low.

This parallelism of the changes of both FDP and FMC confirmed by the correlation analysis argued most probably for secondary fibrinolysis. The latter was of a low degree and caused a moderate dynamics of these parameters in our patients. The lack of fibrinolysis activation in the circulating blood could be explained with the prevalence of cases with relatively slightlier expressed allergic manifestations excepting one patient whose characteristics was mentioned above. It is most probably that the degree of fibrinolysis depends on the severity of the allergic manifestations as presented by the transitory FDP increase with these diseases. Our results are in accordance with the observations of other authors, too (4, 5, 10).

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ИССЛЕДОВАНИЯ ФИБРИНОГЕНА (ФИБРИНДЕГРАДАЦИОННЫХ ПРОДУКТОВ) ПРИ АЛЛЕРГИЧЕСКИХ ЗАБОЛЕВАНИЯХ

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РЕЗЮМЕ

У 38 больных различными аллергическими заболеваниями были исследованы фибриндеградационные продукты, растворимые фибринмономерные комплексы и фибринолитическая активность крови. Результаты этих исследований устанавливаются наряду с обычными показателями коагулограммы. В ходе заболевания наблюдается умеренное повышение фибриндеградационных продуктов до 14,750 мг/л. Только у одного больного с тяжелым аллергическим шоком этот показатель достиг до 640 мг/л, но у него прижизненно была установлена консумативная коагулопатия, а при вскрытии трупа — диссеминированное свертывание крови внутри сосудов. При аллергических заболеваниях увеличение фибриндеградационных продуктов непрочное. При прекращении проявлений аллергического процесса уровень этих продуктов быстро доходит до нормального уровня.

В работе обсуждаются причины появления фибриндеградационных продуктов при аллергических заболеваниях.