состояния клеточно-гуморального иммунитета (CD3 +, CD4 +, CD8 +, CD16 +, CD22 +, ИРИ, уровне IgM, IgG).

Результаты и обсуждение. В сыворотке крови пациентов с артропатическим псориазом выявлены независимо от срока заболевания вероятные изменения концентраций медиаторов стресс-реакции (уменьшением состояния показателей клеточного иммунитета (CD3 +, CD4 +, CD8 + Т-лимфоцитов, фракции CD22 + В-лимфоцитов, ИРИ с компенсаторным повышение уровня CD16 + Т-клеток , цитокинов - IL-1β, IL-8, IL-17, IL-22, стрессорного гормона - кортизола, иммуноглобулинов IgM, IgG, ЦИК), что свидетельствует о напряженности их стресс-реализующих механизмов, даже иногда несмотря на их клиническую стабилизацию кожно суставного процесса.

Выводы. Окончательный диагноз артропатического псориазаопределялся только по совокупности анамнестических, клинических, инструментальных, лабораторных данных и результатов дополнительных методов обследования. Указанные показатели являются ключевыми медиаторами стресс-реализующей имуннонейроэндокринной системы и играют неоднозначную роль при развитии артропатического псориаза, а их разнообразные эффекты требуют дальнейшего изучения.

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EVOLUTION OF SYSTEM ICIMMUNITY IN DICESIN PATIENTS WITH PYODERMAS WHIL EUS INGLASER THERAPY

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Objective. To determine evolution of the systemic immunity indices in patients with pyoderma sin the course of a standard and comprehensive treatment by laser therapy.

Materials and methods. We observed 57 patients with chronic and disseminated forms of pyoderma aged 18-69 years; 29 of them received standard therapy, other 28 patients were additionally prescribed combined (superficial venous and external) laser therapy. We determined the indices of all patients' systemic immunity using well-known techniques.

Resul tsanddiscussion. It hasbeen established, that using laser therapy in comprehensive treatment of patients with pyoderma promotesthe normalization or a tendency to normalization of the system icimmunity and phagocytosis with significant difference between theindices of the individuals who received a standard therapy alone.

Introduction

Pyoderma sare a group of pustular skin diseases, which constitute about 30% in the structure of skin pathologies and ,at present, tend to be disseminated skin lesions, to develop deep and chronic forms, which result in decreasing a patient's capacity and social activity that defines the essential health and social value of pyoderma problems [1, 5, 11]. It was established, that the development of

pyoderma is due to the combined effect of endogenous and exogenous factors, including the important role played by the changes of immunological reactivity, justifying the administration of immunotropic techniques and drugsin their comprehensive treatment [2, 4]. Reducing the effectiveness of skin diseases treatment, including that of pyoderma, at present, is associated with developing resistance to drugs, which causes the use of non-drug methods in dermatology nowadays, including low-intensity (with capacity of 1-20 mV), which possesses an anti-inflammatory, antibacterial or bacteriostatic action, stimulates the immune system factors, without causing any side effects or complications [5, 7, 10].

Intentionstudy

To determine evolution of the systemic immunity in dices in patients with pyodermas in the course of a standard and comprehensive treatment by laser therapy.

Materials and methods

We observed 57 patients with pyoderma aged 18 to 69 years, among which 36 (62.3%) were male and 21 (37.7%) - female. According to clinical criteria [4], 35 (61.0%) patients were diagnosed with disseminated, deep or chronic forms of staphyloderma (chronic folliculitis, sycosis vulgaris or furunculosis), 14 (22.1%) of them had streptoderma (disseminated contagious impetigo, ecthyma), 8 (16.9%) patients suffered from mixed pyoderma (chronic ulcerative pyoderma). The control group consistedof 35 healthy individuals (donors) of thesimilar age.To assess the state of systemic immunity in patients with pyoderma,we determined: the number of total lymphocytes and their subpopulations in terms of CD3 +, CD3 + CD4 +, CD3 + CD8 +, CD19 + by indirect immunofluorescence with monoclonal antibodies to differentiated antigens of the cell surface, as well as the content of serum immunoglobulins (Ig) of classes M, G, A and indicators of nonspecific resistance - phagocytic activity (PhA), phagocytic number (PhN), HCT- test spontaneous and stimulated by known methods [8]. Statistical analysis of the results of research was carried out by methods of statistical analysis [6] using the computer program Statistica 6.0.

Result sanddiscussion

In determining the indices of systemic immunity in patients with pyoderma, we established their probable changes which indicate the developmentof secondary immune deficiency in these patients, byT-cell population mainly,as well as a disturbance of phagocytosis processes, manifested with a significant ($P < 0.05$) decrease in absolute number of total lymphocytes (by 21.2%), T-helper ones (with CD3 + CD4 +) and T suppressor (with CD3 + CD8 +) lymphocytes (11.7% and 18.3% respectively), phagocytic number (by 29.9%), of HCT-test spontaneous and stimulated (by 23.0% and 15.0% respectively), while the most significant changes in these parameters were established in patients with disseminated, deep and chronic forms of pyoderma [9], justifying the administration of immunotropic techniques and drugs in their comprehensive treatment.In order to optimize the treatment of deep, disseminated and chronic forms of pyoderma, we developed a comprehensive treatment that includes, alongsidewithastandardtherapy, theadministrationofthecombinedlasertherapy - percutaneous laser blood irradiation (PLBI) and of external laser therapy.To determine the effectiveness of the developed method of comprehensive treatment of pyoderma, the patients were divided into two groups of a similar age, gender and distribution of clinical forms of pyoderma using themethod of randomization: the first one (comparative) included 29 patients who received a standard therapy; the second(main) group consisted of 28 people, who were additionally administered combined laser therapy: PLBI sessions (10 minutes, every two days, 8-10 procedures) and external laser therapy (daily sessions for 4-6 minutes on 1 areawith total exposure - 20-25 minutes; 10-15 procedures). For laser therapy procedures we used a low-intensity semiconductor laser device SM-2 PL "Gurza" with a wavelength of 0.65 micrometers and laser power of 10 mw. The evolution of the system icimmunity in dices and the body's non-specific resistance in patients with pyoderma, who were in comparative and main groups, is displayed in the table.

Table. Evolution of the systemic immunity and phagocytosis indices in patients with pyoderma after using different treatments (M±m)

Indices, measurement units	Control group (n=35)	Patients with pyoderma			
		I (comparative) group(n_1=29)		II (main) group (n_2=28)	
		Before treating	After treating	Before treating	After treating
lymphocytes, g/l	2,41±0,102	1,89±0,097***	2,07±0,095*	1,87±0,093*** p_{1-2}>0,05	2,22±0,102 p_{1-2}>0,05
		P>0,05		P<0,05	
T-lymphocytes (CD 3+),g/l	1,44±0,082	0,862±0,050***	1,10±0,053***	0,879±0,063*** p_{1-2}>0,05	1,20±0,062* p_{1-2}<0,05
		P<0,05		P<0,001	
T-helpers (CD3+CD4+),g/l	0,796± 0,054	0,540±0,034***	0,662±0,033*	0,556±0,040*** p_{1-2}>0,05	0,789±0,040 p_{1-2}<0,05
		P<0,05		P<0,001	
T-suppressors (CD3+CD8+),g/k	0,336± 0,042	0,301±0,021	0,323±0,021	0,290±0,022 p_{1-2}>0,05	0,330±0,024 p_{1-2}>0,05
		P>0,05		P>0,05	
B-lymphocytes (CD19+),g/l	0,361± 0,019	0,478±0,024***	0,468±0,030**	0,535±0,024*** p_{1-2}>0,05	0,432±0,020** p_{1-2}>0,05
		P>0,05		P<0,01	
Ig A, g/l	1,98±0,06	1,77±0,96	1,63±0,056***	1,80±0,140 p_{1-2}>0,05	1,63±0,088*** p_{1-2}>0,05
		P>0,05		P>0,05	
Ig M, g/l	1,44±0,060	1,90±0,140***	1,85±0,120***	2,10±0,125*** p_{1-2}>0,05	1,60±0,077 p_{1-3}>0,05
		P>0,05		P<0,01	
Ig G, g/l	9,49±0,342	14,2±0,660***	12,8±0,604***	14,9±0,425*** p_{1-2}>0,05	10,4±0,426 p_{1-2}<0,01
		P>0,05		P<0,001	
Phagocytic activity, %	62,9±4,28	55,4±1,86	58,3±1,49	56,1±2,34 p_{1-2}>0,05	62,6±1,94 p_{1-2}>0,05
		P>0,05		P<0,05	
Phagocytic number	6,88±0,540	4,02±0,315***	5,00±0,206**	4,36±0,306*** p_{1-2}>0,05	6,01±0,206 p_{1-2}<0,001
		P<0,05		P<0,001	
Spontaneous NST-test %	12,5±0,850	9,94±0,220*	11,2±0,202	10,1±0,577* p_{1-2}>0,05	12,6±0,827 p_{1-2}>0,05;
		P<0,01		P<0,05	
Stimulated NST-test %	29,3±0,723	20,4±0,970***	23,7±0,730***	20,8±0,790*** p_{1-2}>0,05	26,6±0,650* p_{1-2}<0,01
		P<0,01		P<0,001	

Note: 1. * – probabilitydegreeof the difference as compared to the patients from the main group:
* – p<0,05; ** – p<0,01; *** – p<0,001.
2. p_{1-2} – probabilityoftheindicesdifferencein patients of different groups.
3. P – probability of indices difference in patients before and after the treatment.

Asthe results of our research, presented in the table, indicate, the patients fromthefirst (comparative) group whoweretreatedusinga standard therapy showed a probable increase in the absolute number of T-lymphocytes (with CD3 +) and T-helper cells (with CD3 + CD4 +), by 12.7% and 22 6% respectively, (p <0.05), which, however,

were significantly lower attheendofthe treatment (by 23,6% and 16,8% respectively, p <0,05) compared to the control group parameters. Patients of the comparative groupt endedto increase the total number of lymphocytes (by 9.5%, p> 0.05), but preserved significant difference compared to tha tofthe control group (by 14,1%, p <0,05) without significant changes in humoral immunity indices.At the same time, the patients of the main group hadanincrease in the absolute number of total lymphocytes (by 18,7%, p <0,05) (see the table)with the approach to the values in the control groupat the end of the treatment, and increased absolute number of T lymphocytes (with CD3 +) by 36,5% (p <0,001) with a decrease in the difference, compared to the figures in the control group (by 16,7%, p <0,05) and the predominance of their number at the end of the treatment inpatients of the first group (by 9,1%, p <0,05). The patients of the main group at the end of the treatment also increased the number of T-helper (with CD3 + CD4 +) lymphocytes (by 41,9%, p <0,001) with a predominance over their number in individuals of the first groupat the end of the treatment (by 13,8%, p < 0.05). The patients of the second group also had decreased the number of B-lymphocytes (with CD19 +) by 19,3% (p <0,05), but preserved the difference compared to the control group indices (an increase by 19,7%, p <0 , 05). However, the patients of the main group also hada decrease in the concentration of Ig M (by 23,8%, p <0,01) and Ig G (by 30,2%, p <0,001) and thepatientsfromthecontrolgrouphadclosevaluestoo,butwithoutsignificantevolutionin concentration of Ig A. Analysing non-specific resistance in patients with pyoderma due to the use of different methods of treatment (see the table) found a significant increase in PhN (by 24,4%, p <0,05) and a moderate increase in the spontaneous HCT- test (by 12,7%, p <0,05) and stimulated HCT-test (by 16.2%, p <0,01) in the patients of the first (comparative) group. At the same time, the patients of the second (main) group also showed an increase in the index PhA (by 11,6%, p <0,05) and a significant increase in PhN (by 37,8%, p <0,001), spontaneous HCT- test (by 24 8%, p <0,05) and stimulated HCT- test (by 27,9%, p <0,001) with significant difference between the indexes PhN and stimulated CHT- test, determined at the end of the treatment in the patients of the comparative group (by 20,2% and 12,2% respectively p <0,01).Thus, using laser therapy in comprehensive treatment of patients with pyoderma leads to more significant, compared to a standard therapy, positive dynamics of most indicesof the systemic immunity and phagocytosis, as evidenced by their probable difference at the end of the treatment from those in the patients of the comparative group. The data obtained prove immunostimulating effect of low-intensity laser radiation on the indices of systemic immunity, including its cell population and phagocytic activity of phagocytic blood cells both at the initial and the final stages ofphagocytosis.

Conclusion

Using combined laser therapy (percutaneous laser blood irradiation, external laser therapy) in the treatment of deep, disseminated and chronic forms of pyoderma causes more significant, compared toa standard therapy, positive dynamics of systemic immunity and non-specific resistance of the patients' organisms.

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РЕЗЮМЕ

ДИНАМІКА ПОКАЗНИКІВ СИСТЕМНОГО ІМУНІТЕТУ У ХВОРИХ НА ПІОДЕРМІЇ ПРИ ЗАСТОСУВАННІ ЛАЗЕРНОЇ ТЕРАПІЇ

О.І.Денисенко, М.О.Дашко

Мета роботи. Визначити у хворих на піодермії динаміку показників системного імунітету у процесі стандартного та комплексного лікування із застосуванням лазерної терапії.

Матеріали та методи. Спостерігали 57 хворих на хронічні та поширені форми піодермій віком 18-69 років, з них 29 – отримали стандартну терапію, іншим 28 додатково призначали комбіновану (надвенну та зовнішню) лазерну терапію. Всім хворим визначали показники системного імунітету відомими методами.

Результати та обговорення. Встановлено, що застосування у комплексному лікуванні хворих на піодермії комбінованої лазерної терапії сприяє нормалізації чи тенденції до нормалізації показників системного імунітету та фагоцитозу за вірогідної різниці з показниками осіб, що отримали лише стандартну терапію.

РЕЗЮМЕ

ДИНАМИКА ПОКАЗАТЕЛЕЙ СИСТЕМНОГО ИММУНИТЕТА У БОЛЬНЫХ ПИОДЕРМИЯМИ ПРИ ИСПОЛЬЗОВАНИИ ЛАЗЕРНОЙ ТЕРАПИИ

О.И.Денисенко, М.О.Дашко

Цель работы. Изучить у больных пиодермиями динамику показателей иммунитета в процессе стандартного и комплексного лечения с использованием лазерной терапии.

Материалы и методы. Наблюдали 57 больных хроническими и распространенными формами пиодермий в возрасте 18-69 лет, из них 29 – получили стандартную терапию, остальным 28 назначали комбинированную (надвенную и наружную) лазерную терапию. Всем больным определяли показатели системного иммунитета известными методами.

Результаты и обсуждение. Использование в комплексном лечении больных пиодермиями комбинированной лазерной терапии способствует нормализации или тенденции к нормализации показателей системного иммунитета и фагоцитоза при наличии достоверной разницы с показателями больных, которые получили только стандартную терапию.

УДК 615.517: 616.516.5-085.37

ІНТЕГРАЛЬНИЙ КОЕФІЦІЄНТ ГУМОРАЛЬНОГО ІМУНІТЕТУ У ХВОРИХ НА ПОШИРЕНІ ДЕРМАТОЗИ

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Мета роботи. Провести порівняльний аналіз інтегрального коефіцієнта гуморального імунітету у хворих на поширені дерматози без ускладненого та з ускладненим алергологічним анамнезом з оцінкою порушень гуморального імунітету. В зв'язку з цим у сироватці крові визначали вміст імуноглобулінів (Ig) A, M, G за допомогою імуноферментних тест-систем виробництва ТОВ НВЛ „Гранум” (Україна), а потім згідно формулі розраховували інтегральний коефіцієнт гуморального імунітету.