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Ginecology-color dopller-Internal medicine-Pediatrics-Ultrasound (trodimensional)-Mamography-Ortopedy

CASE REPORT OF TRANSIENT HIPOGAMMAGLOBULINEMIA TREATED WITH TMAZ (tribo mechanicaly activated zeolite)

(Preliminary report)

INTRODUCTION

Transient hipogammaglobilinemia is a member of the group of Primary immunodeficiency. As entity, it was established between scientists 1969., Gabrielson (1), Khol E. et all. 1976. (2), Jordanidis K. 1975. (3), Tympaner KD and kolegues 1976. (4).
Clinicaly, the incidence of illness is at various authors noted at 5% to even 18% (Kobayashi 1980), equally in males and females, occurs between 3. and 7.th months of life and lasts approximatelly 18 months. Some works showed prolonged period of disease until 5.th year of life. (Mc Geady SJ 1987.(9) and Žižek CL 1990. (10)).

METHODS AND MATHERIALS AND PATIENTS

Five children, in few months after their born, showed simptoms of transient hipogammaglobulinemia. Development of their health, was followed until today by our clinic pediatricians. They were all treated with standard simptomatic medical therapy (Gamavenin, 0,2g/kg and antibiotics when needed). Until 1st of March 2001. their health condition was actually the same without any improvence. They were suffering from recedival bronhitis and otittis, episodes of high temperature with no known etiology, often with dispeptic problems (diarea) and mostly feeling poor.
These children are all today between 3th and 4th years of life .
Protocol for establishing diagnose approwed by WHO was: **more than 8 recidives of respiratory infection in one year, low concentracion of immunoglobulin for 2 SD in comparison with reference for the same age, low reactivity of lymphocites on mitogen Pokeweed and usuall tests for measuring state of immune system in children.**

Tmaz (tribo mecanically activated zeolite) is a new harmless, non toxic substance which showed good results in improving imune system at animals and humans. It is also proven as a good antioxidant. Few works recently published (11,12) explaind some of TMAZ characteristics.
For the test, we used capsulated TMAZ (300mg). Each child got 12 capsules per day (3,6g). The aim of this study was to follow the state of immune system of children before and after tratement with TMAZ, from 1st of March 2001. in period of 6 months. The protocol for collecting a medical data for each child, was add in appendix of this study.

RESULTS:

Before taking Tmaz, in all our patients, results of laboratory findings in vivo and in vitro showed the disturbances of the immune system. The value of IgG are low in comparison with referent values for the age and gender(in vivo). In vitro, test showed low response to mitogen factor PWM, PHA, Con A (test of lymphocit proliferation of the peripheral blood).
After 1 month and after 3 month the laboratory tests repeated (in vivo, in vitro).

Here are the results of tests for two child:

1st patient, Lalić Daron, born 3.12.1997. with often bronchitis recidives and intermitent diarea. He was hipotrophic, under feed, adinamic, with cerebral malfunction of mooving, hipotonic. Bacteriological analysis of feces was negative all the time.

	Before taking TMAZ			*After taking TMAZ*		
date/test	13.10.99.	14.2.00	17.1.01.	17.4.01	20.4.01	
IgG (9,20-17,5g/lit.)		3,3		8,4		
IgA (0,96-3,3g/lit.)		0,1		0,91		
IgM (0,40-1,6g/lit.)		4,6		2,8		
PHA (17-39% S-faze)	5,5				34	
ConA (7-18% S-faze)	8,5				30,8	
PWM (9-25% S-faze)	1,8				16,2	
AST		31			18	
ALT		22			14	
LDH		424			111	
CD3			50%	62%		
CD3+CD4			29%	34%		
CD4/CD8			1,2	1,4		

2nd patient, Marošević Marija, born 16.5.98. with anemia in blood, low hemoglobin, low hematokrit, with poor health condition:

	Before taking TMAZ			*After taking TMAZ*		
date/test	13.06.00 .	5.6.00		17.4.01	13.5.01	
IgG (9,20-17,5g/lit.)		3,2		6,77		
IgA (0,96-3,3g/lit.)		0,5		0,7		
IgM (0,40-1,6g/lit.)		1,7		1,16		
PHA (17-39% S-faze)	14				34	
ConA (7-18% S-faze)	14,5				30,8	
PWM (9-25% S-faze)	6,3				16,2	

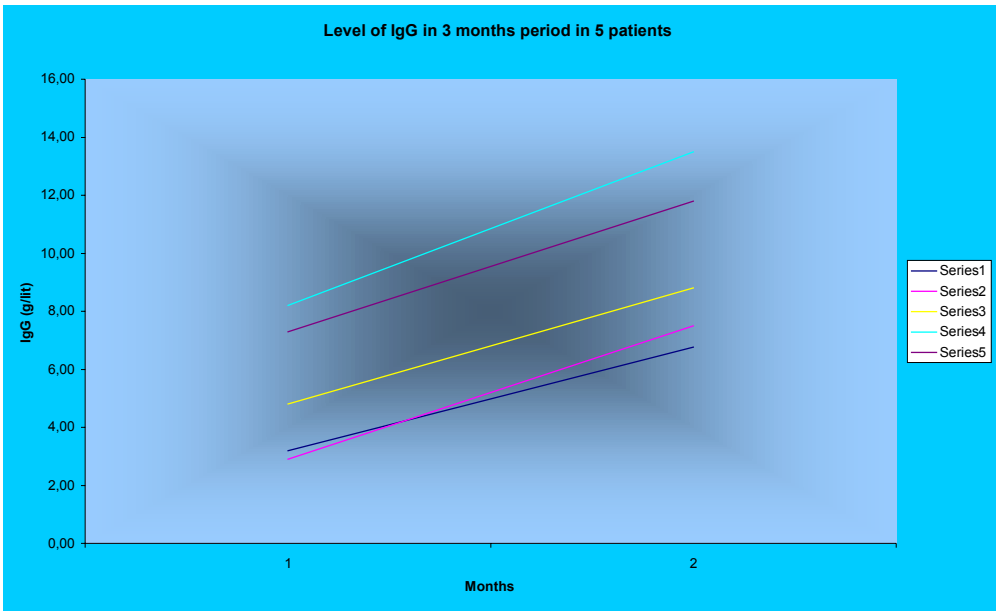

Figure 1. The level of IgG at each patient.

CONCLUSION AND DISCUSSION

During 3 months of taking only TMAZ as a therapy, patients (all of them) were submited to the usuall laboratory tests (SE, complete blood screen, transaminases, urin analysis, bacteriological tests of feces) and immunological tests. All tests in all five patients showed improved values, most of them in limits of referent values. Immunoglobulins are also improved esspecially IgG. Tests in vitro (PHA, Con A, PWM) showed good reaction and immunological response.
Today we notice a normal psiho mothoric development of each child. From the beginning of this study, we didn't encountered even one recidiv of infection of any kind. We also had no side effects. Little patients feel much better and behave as normal child.

Our oppinion about the effect of TMAZ, is that this supstance probably influence the T helper cells which are the koordinators between T and B lymphocites, in the way of stimulating B lymphocites for producing the immunoglobulines (IgA, IgG esspecially, IgM). This action in vitro tests increases the value of PWM.

This excellent health condition of each child, encourage us to give TMAZ today as theapy and only therapy for conditions of primary immunodeficiency at any age and any time.

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Zagreb, 20.06.2001.

REFERENCES

1. Gabrielson AF Cooper MD, Peterson RDA and Good RA: Textbook of Immunopathology, Ed Mischer and Mueller-Eberhard New York 1969; p385
2. Kohl E: Ergebnisse immunoelektrophoretischer serum-analysen von 1000 Kindern mit verschiedenen Erkrandkungen. Diss Munchen 1974.
3. Jordanidis K: Klinischer und immunochemischer Beitrag zum Verlauf von Immunodrfizienzen in Kindesalter. Diss Munchen 1975.
4. Tympner KD, Neuhaus F: Immunmengel bei Kindern, 1976, Munchen- Berlin-Wien
5. Rieger CHL, Nelson LA, Peri BA, Lusting JV. Newomb RW: Transient hypogammaglobulinemia of infancy. J Pediatr 1980; 90:601-3
6. Siegel RL, Issekutz T, Schwaber J, Rosen FS, Geha RS: Deficiency of T helpter cells in Transient Hipogammaglobulinemia of infancy. N Engl J Med 1981; 305-1307
7. Reinherz EI, Geha R, Wohl ME, Morimoto C, Rosen FS, Schlossman SF: Immunodeficiency associated with loss Tu-inducer T-cell function. N Engl J Med 1981; 304:800-6
8. Buckkley RH: Immunodeficiency, I Allerg Clin Immunol 1983; 72:627-643
9. McGeaddy SJ: Transient hypogammaglobulinemia of infancy: Need to reconsider name and definition, Jefferson Medical College of Thomas Jefferson University, Philadelphia, J Pediatar 1987; 110:47-50
10. Zizek CL: Imunološki status djece predškolske dobi s učestalim infekcijama, 1990; Zagreb
11. K. Pavelic, M. Hadzija, L. Bedrica, J. Pavelic, I. Dikic, M. Katic, M. Kralj, M. Herak Bosnar, S. Kapitanovic, M. Poljak-Blazi, S. Krizanac, R. Stojkovic, M. Jurin, B. Subotic, M. Colic: Mechanically treated natural clinoptilolite zeolit: new adjuvant agent in anticancer therapy.
    Journal of Molecular Medicine, (2000 in press)
12. M. Colic, K. Pavelic: Molecular mechanisms of anticancer activity of natural dietetic products. Journal of Molecular Medicine, (2000,78:333-336)