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**CASE REPORT OF TRANSIENT HIPOGAMMAGLOBULINEMIA
TREATED WITH TMA-Z (tribo mechanically activated zeolite) –
MEGAMIN AKTIV**

INTRODUCTION

Transient hipogammaglobulinemia 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). Clinically, 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)

METHODS AND MATHERIALS AND PATIENTS

Five children, in few months after their born, showed symptoms 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 improvement. 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 lymphocytes on mitogen Pokeweed and usuall tests for measuring state of immune system in children.

TMA-Z (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 TMA-Z characteristics.

For the test, we used capsulated TMA-Z (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 TMA-Z, 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 TMA-Z, 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.

date/test	<i>Before taking TMAZ</i>			<i>After taking TMAZ</i>		
	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:

date/test	<i>Before taking TMAZ</i>			<i>After taking TMAZ</i>		
	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	

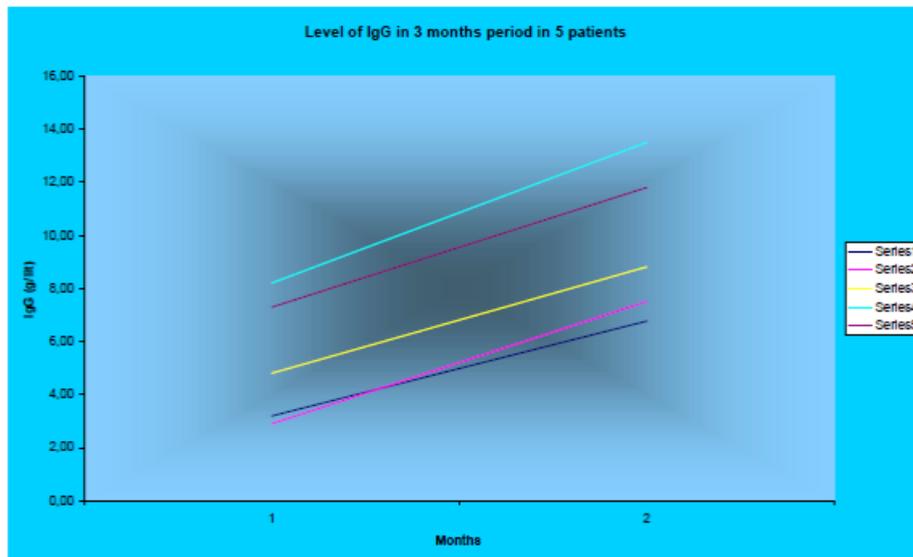


Figure 1. The level of IgG at each patient.

CONCLUSION AND DISCUSSION

During 3 months of taking only TMA-Z as a therapy, patients (all of them) were submitted to the usual 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 especially IgG. Tests in vitro (PHA, Con A, PWM) showed good reaction and immunological response.

Today we notice a normal psychomotoric development of each child. From the beginning of this study, we didn't encounter 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 opinion about the effect of TMA-Z, is that this substance probably influence the T helper

cells which are the coordinators between T and B lymphocytes, in the way of stimulating B lymphocytes for producing the immunoglobulines (IgA, IgG especially, IgM). This action in vitro tests increases the value of PWM.

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

Zagreb, 20.06.2006

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