SUCCESSFUL TREATMENT OF SEVERE-CARBIMAZOLE INDUCED AGRANULOCYTOSIS BY LITHIUM CARBONATE

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SYNOPSIS

Severe Carbimazole induced agranulocytosis is a rare and often fatal complication. We report the successful outcome of a patient who recovered rapidly when Lithium carbonate treatment was added to the treatment.

CASE HISTORY

A 28 year old Chinese female patient was first seen here in June 1976 with clinical features of thyrotoxicosis. She had a diffusely enlarged goitre and bruit. Thyrotoxicosis was confirmed by serum resin uptake of triiodothy ronine 135% (Normal 75-115%), total thyroxine 13.1 ug T41% (Normal 3-7), free thyroxine index 17.7 (normal 2.25-8.05). Carbimazole 15mg tds and Propanolol 40mg tds was then started. Six weeks later, she developed sore throat and fever (40°C). Her total white count was 2,500/cu mm with no polymorphonuclear leucocytes in the peripheral blood film. She was admitted into a reverse-barrier intensive care treatment room for further management.

Hb 12Gm/DL. Total WBC 800/cu mm, no polys, 22 atypical monocytes, 96% lymphocytes, platelets 135,000/cu mm. Bone marrow showed absent granulopoiesis, a few blasts cells, increased lymphocytes, otherwise hypercellular marrow with normoblastic erythropoiesis. Megakaryocytes normal. Repeated blood cultures (aerobic, anaerobic and fungal) grew E. coli and Klebsiella, but negative for fungi. Mycelial forms of candida were isolated from the oropharynx. Hepatitis Bs antigen negative. Urea 20mg, electrolytes normal. Normal liver function tests.

Cinically, she was very toxic and ill. Treatment with Lithium carbonate 100mg tds, parenteral Amplicillin, Gentamycin, oral Nystatin, Sodium Iodide, Hydrocortisone and intravenous fluids

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Lithium Carbonate Treatment for Carbimazole Agranulocytosis

		TOTAL WBC PER/CU MM	TOTAL POLYS PER/CU MM	TOTAL LYMPHOCYTES PER/CU MM	PLATELET COUNT PER/CU MM
Day 1	Lithium Carbonate 100mg tds	800	0	All lymphocytes	125,000
Day 2	"	500	0	"	215,000
Day 3	"	700	0	"	250,000
Day 4	"	1,200	A few early ? myelocytes seen.	"	230,000
Day 5	"	2,300	220 (early myelocytes seen)	2,000	250,000
Day 6	"	3,200	224	2,818	
Day 7	"	3,500	*1,190	2,279	265,000
Day 10	"	8,200	*4,100	3,854	250,000

*Nitrobule tetrazolium test: over 90% of polymorphs positive

were started immediately. Her course was stormy in the first week and she required frequent supportive granulocyte transfusion, antibiotics and emergency treatment for thyroid crises. On the 7th day, her temperature fell to normal levels and this was associated with the appearance of mature NBT-positive granulocytes in the peripheral blood (see Table). Thereafter, her recovery was uneventful and she was discharged on the 21st day. Subsequently, she continued treatment with Lithium carbonate 200mg tds and Propanolol 40mg tds (for her thyrotoxicosis).

When last seen in May 1978, she was clinically euthyroid but had developed troublesome acne since starting Lithium therapy. There were no hepatotoxic or nephrotoxic effects of Lithium on this dosage.

Although Lithium has been applied in the treatment of severe neutropenia (Greco and Bereton, 1976; Stein et al, 1977; DeVita et al, 1970) to our knowledge, this is the first time it has been successfully used for restoring rapidly normal granulocytes in a near-fatal septicaemia due to Carbimazole induced agranulocytosis. In this instance, it has also been used to control overt thyrotoxicosis where other anti-thyroid drugs were contraindicated as lithium is a recognised antithyroid agent (Kristensen et al, 1976).

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