

POLYCYTHEMIA VERA RUBRA TREATED WITH NITROGEN MUSTARD

Report of a Case

DONALD W. BORTZ, M.D., and RUSSELL L. HADEN, M.D.

Division of Internal Medicine

IT has been suggested by Jacobson *et al.*¹ that polycythemia may be controlled by nitrogen mustard. These workers observed 5 cases, the longest remission extending over seventeen months.

The case of polycythemia vera rubra reported here was adequately managed with the methyl bis-amine form of nitrogen mustard. The results support the view of Jacobson and his colleagues.

Case Report

A man, aged 51, came to the Cleveland Clinic complaining of progressive exhaustion and nervousness. Four years previously, while working as a gasoline station attendant, he had noted impaired vision and inability to coordinate his hand movements properly. A diagnosis of polycythemia was made, and he was given 12 to 15 x-ray treatments, which apparently resulted in some improvement. On admission his blood pressure was 212 systolic, 130 diastolic. The conjunctivae were injected and the patient appeared plethoric. The spleen was palpable 2 fingers' breadth below the left costal margin. The fundi revealed findings consistent with essential hypertension and grade II arteriosclerosis. Clubbing of the fingers was not noted. The urinalysis, blood sugar and urea, and Wassermann and Kahn reactions were normal. The urea clearance was 60 per cent the first hour and 62 per cent the second hour. Roentgenologic examination of the chest and an electrocardiogram did not reveal any abnormal findings. The complete blood count was 8,640,000 red cells; hematocrit reading 76 cc., or 169 per cent of normal; volume index 0.98; hemoglobin 162 per cent; white blood count 13,500; neutrophils 79 per cent; lymphocytes 13 per cent; eosinophils 5 per cent; monocytes 3 per cent. The total blood volume determination by means of the congo red test was 98 cc. of cells per kg. body weight.

The patient was given nitrogen mustard intravenously, 0.1 mg. per kg. body weight daily on four consecutive days. One month later the blood count was 7,330,000 red cells; hematocrit reading 133 per cent; hemoglobin 136 per cent; white blood count 5500; and the total blood volume 59 cc. of cells per kg. of body weight. The exhaustion and the nervousness were subsiding, the plethora and conjunctival congestion had improved, and the spleen was no longer palpable. Additional treatment was not instituted.

Approximately six months following the patient's initial visit, the red blood count was 6,030,000; hematocrit reading 134 per cent; hemoglobin 124 per cent; white blood count 10,950; neutrophils 82 per cent; lymphocytes 12 per cent; eosinophils 5 per cent; monocytes 1 per cent, and the total red cell mass was 39 cc. per kg. body weight. The nervousness was gone, the exhaustion was almost absent, and the plethora and conjunctival congestion were absent. Splenomegaly remained absent.

Comment

A case of polycythemia vera rubra is being successfully controlled by the methyl bis-amine form of nitrogen mustard. Though adequate control is being maintained approximately six months following treatment, sufficient time has not elapsed for a complete evaluation of nitrogen mustard as a therapeutic agent in this disease.

Reference

1. Jacobson, L. O., *et al.*: Nitrogen mustard therapy; studies on effect of methyl-bis (beta-chloroethyl) amine hydrochloride on neoplastic diseases and allied disorders of hemopoietic system. J.A.M.A. **132**: 263-271 (Oct. 5) 1946.