

Red blood cells generation and melatonin.

Melatonin has revealed itself as a most effective and vigorous, available erythropoietic hormone, both in normal and in functionally defective bone marrow, unless the bone Reticulo Endothelial System conditions are seriously impaired.

The exciting erythropoietic action has been successfully tested in aplastic and uremic anemia, in hemoglobinopathies, in several hemolytic anemias and in acute blood loss anemia.

In aplastic anemia the results are depending on the seriousness, the duration and the etiology of the syndrome, as well as on the patient's age. The transfusions are more or less thinned put, or quite dismissed after Melatonin administration, and the subjective conditions are considerably improved.

The dosages are reasonably low: 1-2 mg/pro die/per os; they are sufficient in mild cases. In seriously ill patients, intramuscular or i.v. injected 2-5 mg give more complete and more quickly efficient results. The action mechanism resides in a more intense and quick reproduction of erythroid series bone marrow cells, as well as in a quicker transit into the bone marrow sinusoids of erythroblasts and reticulocytes, as is shown by the appearance of reticulocytes and erythroblasts in the circulating blood in high percentage. In anemias as well as in other hemopathies, the treatment can be protracted for several years without any appreciable noxious effect. A secondary effect, observed in both male and female patients, in both young or adults patients, is a certain, more or less deep drowsiness, particularly when Melatonin is injected i.m. or i.v., rather than administered by mouth. The favourable effects can be strengthened by α -tocopherol, which raises the osmotic and mechanical resistance of erythrocytes by ACTH, when the systemic arterial pressure is lower than normal; by testosterone, especially in old age, on chronically anemic patients. In hemoglobinopathic patients the transfusion may be diminished by 25% or more; in some adult splenectomized patients, blood Hb levels of g 9% can be maintained, without transfusion, for months and years. In some, but not in all patients, there seems that A-V O₂ difference is increased by Melatonin, so that low hematocritic values, and low blood Hb levels down to g 6% are well born. DPG erythrocyte amounts are not significantly changed by Melatonin injected into rats (1,2).

REFERENCES

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