ISCADOR THERAPY FOR CANCER: AN INTRODUCTION

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Iscador is the trade name of a Mistletoe (Viscum album) preparation developed and produced by the society for cancer research, Arleisheim, Switzerland (available in India).

Iscador was introduced in the treatment of human cancers as early as 1921 by Rudolf Steiner; at the very beginning of its development is was used in man so its safety and effectiveness were directly assessed without prior evaluation in animals.

The concept of Iscador as an anticancer drug is focussed on Rudolf Steiner's *anthroposophical concept* as well as *cytostatic effect on cancer cells* and *immuno stimulating activity* through thymus.

ANTHROPOSOPHICAL CONCEPT OF RUDOLF STEINER

The behaviour of cancer cells, i.e. unrestrained growth, unregulated proliferation of the cells and compound development. Though growth is common to all forms of life but under control, i.e. restrained growth. The most fundamental feature of malignant neoplasia is the escape of cells from this restraint. Rudolf Steiner suggested that behind these controlling mechanisms stands an active principle what he called was *form giving principle* which keeps the cells under physiologieal restraint.

According to Rudolf Steiner the origin of cancer lies in the inability of this form giving principle to exert its proper effect on cellular growth. The greater the loss of control the greater the degree of malignancy exhibited by the tumour cells.

This deficiency or inability of the form giving principle is described by Rudolf Steiner as a state of *anergic* or *hypoergic*. Based on this concept of the disease he recommended for its treatment preparations of the plant Viscum album to induce a process contrary to the disease in the patient. Rudolf Steiner called this hypoergic effect of Iscador.

SELECTIVE CYTOSTATIC EFFECT

Iscador is the only anticancer drug which has selective cytostatie effect, i.e. it checks the growth of cancer cells only, without disturbing the healthy cells, by inhibiting the synthesis of nucleic acids in cancer cells. RNA & DNA synthesis in malignant cells is inhibited by protein fractions of mistletoe extract as a whole. Nucleic acid synthesis of healthy cells was not affected even at very high concentrations of the protein fractions. That is why erythropoiesis is not suppressed in the patients under Iscador treatment. On the contrary Iscador treatment stimulates erythropoiesis.

This erythropoietic stimulating effect of Iscador has been observed in those patients who are coming after radiotherapy or chemotherapy where erythropoiesis has been suppressed, in these patients after Iscador therapy there is earlier recovery of erythropoietic activity as compared to patients who do not take Iscador after radiotherapy.

IMMUNOMODULATING EFFECT OF ISCADOR THROUGH THYMUS

Iscador may induce hyperplasia in thymus. Whether this is due to an unspecific immunostimulating effect of Iscador or specifically related to the anticancerous property of Iscador cannot be concluded. From numerous studies in animals it has been observed that under the treatment of Iscador there appears an inverse relationship between the degree of thymus hyperplasia and the extent of tumour growth. It has been observed that animals which had not responded with thymusproliferation under Iscador treatment showed the shortest survival periods.

COMPOSITION OF ISCADOR

Iscador is a very complex natural plant extract of whole Mistletoe. As a plant extract it contains a variety of substances and cannot be chemically defined completely. Harvest time, host tree and place of growth may have an influence on the chemical composition.

The dry substance accounts for about 16% of clear mistletoe juice. Iscador contains basic proteins fraction with 10 components differing in their molecular weights which range from 14,000 to 1,25,000.

No individual protein fraction has been found responsible for Iscador therapeutic effect but it is the whole plant extract.

DESCRIPTION OF ISCADOR

The various Iscador preparations are classified according to the host tree of the Mistletoe used in their preparation, e.g.

Iscador A—host is fir tree.
Iscador M—host is apple tree.
Iscador P—host is pine tree.
Iscador QU—host is oak tree.
Iscador U—host is elm tree.

To enhance its therapeutic power selectivity to organs and systems, it has been combined with various metals like mercury, copper, silver.

Each Iscador preparation is available in a number of strengths which means its decimal dilution of the fresh plant juice.

Following strengths are prepared:

Iscador 3% means 30 mg per ml
2% means 20 mg per ml
1% or 2 means 10 mg per ml
3 means 1 mg per ml

4 means 0.1 mg per ml
5 means 0.01 mg per ml

AVAILABILITY

These injections are available in a pack of 7 ampoules. Each ampoule of 1 ml in sequence of rising concentration.

TOXICITY

Iscador is very well tolerated by human beings even in much higher concentrations than the therapeutic requirement. Toxic effects have been studied in lower animals. Toxicity of Iscador in mice as expressed in mg of fresh plant juice per kg of body weight varied from 90 mg/kg when administered intravenously to 800 mg/kg administered subcutaneously. The clinical effect of single toxic dosage of Iscador administered to mice consists mainly in ataxia, dyspnoea, tonic/clonic cramps. If the animal dies it is usually due to circulatory collapse.

EXCRETION

Limited studies were conducted regarding this issue with various protein fractions of Iscador. It was found that about 40% of the total detected quantity in the organisms was found in spleen and liver. Within 41 hours after administration 65% of the protein fractions were excreted. 7% of protein fraction was detected in the tumour after 17 hours of injection and 4% after 41 hours.

OPTIMAL DOSE

The studies on thymus hyperplasia and tumour growth inhibition demonstrated that the most responsive level of Iscador is not the highest tolerated dose but in the range of 5 to 20% of the toxic dose. Continuous daily treatment with Iscador within this range did not cause any clinical toxic symptom. If Iscador is used in higher doses than above stated optimal dose the thymus hyperplasia and tumour growth inhibition decreased.

SAFETY

More than 100,000 patients have been treated with Iscador of whom about 10,000 are completely documented.

(1) Over reactions were in the form of a mild fever to high fever experienced several times.

(2) Very rarely allergic reactions were observed (less than 0.001% of treated cases) local irritations are observed after injection especially when higher concentrations are used. This local inflammatory reaction rapiding responds to cool compress.

Note: Antimitotic property of Iscador on plant cells has been investigated.

If such reactions are excessive, it may be necessary to dilute the concentrated strength of Iscador with physiological saline.

(3) Some patients may report nausea after injection.

(4) Signs of bone marrow suppression or liver dye functions have never been observed in patients treated with Iscador even for many years. No cardiac, renal, neurological or digestive reactions have been reported.

(5) As Iscador causes hyperaemia in the tumour, it may give rise to increased intracranial tension in the case of brain tumours. Therefore such tumours are contraindications for Iscador injections, here Iscador is administered orally.

HOW ISCADOR IS USED

In all cases unless stated Iscador is used in the following ways:

(i) To be injected subcutaneously near the tumour but never in the tumour or it can be injected in the area of lymphatic drainage but always *avoid irradiated areas.*

(ii) No local antiseptic is to be used while injecting the Iscador.

(iii) It should be given preferably in the morning.

(iv) Injections are given on every 2nd or 3rd day in a repeated sequence of rising concentration. Each course is divided into two groups of 7 injections each.

The interval after the 7th injections is about 1 to 7 days (depending upon the nature/stage of the disease). While the interval after the 14th injection is about 1 to 8 weeks.

(v) On an average about 80 mg of fresh plant per kg body weight is administered in a series of 14 injections.