UKRAIN – Chelidoneum majus – no câncer

Ukrain (NSC-631570) is claimed to be a semisynthetic compound of thiophosphoric acid (triaziridine) and the alkaloid chelidonine derived from the common weed, Chelidonium majus (greater celandine), which grows primarily in Europe and Asia.\(^1\)

**Ingredients/Components**

Ukrain has been described as a semi-synthetic Chelidonium majus alkaloid derivative, consisting of three chelidonine alkaloids combined to triaziridide. Panzer et al found the actions of Ukrain to be similar to the Chelidonium majus alkaloids it is prepared from.\(^2\)

Chelidonium majus contains a range of more than 30 alkaloids, most notably isoquinolin derivatives (chelidonine, coptisine, berberin etc.). Chemical analyses of Ukrain were inconsistent with the proposed trimeric structure and demonstrated that at least some commercial preparations of Ukrain consist of a mixture of C. majus alkaloids (including chelidonine).\(^2\)

Serious doubts have been voiced concerning the chemical purity of the allegedly semi-synthetic mixed preparation from alkaloids of Chelidonium majus L and thiotepa.\(^3\) Thiotepa is a chemotherapy drug and cancer chemotherapeutic member of the alkylating agent group and is derived from aziridine and thiophosphoryl chloride and its main toxicity is myelosuppression.\(^4\) No thiotepa was contained in the Ukrain sample they investigated. Nowicky later on also claimed that the free thiotepa is removed out of the compound and that what is left is the Ukrain molecule and parts of the Chelidonium extract.\(^5\)

**Application and dosage**

Ukrain is most commonly administered intravenously. It is claimed that it consists of one molecule of thiophosphoric acid conjugated to three molecules of chelidonine.

**History / providers**

Ukrain was developed in 1978 by Dr. Wassil J. Nowicky, director of the Ukrainian Anti-Cancer Institute of Vienna, Austria and first presented at the 13th International Congress of Chemotherapy in Vienna in August 1983. In 2004 and 2006, Nowicky was nominated for the Nobel Prize in Chemistry. The manufacturer of Ukrain is Nowicky Pharma, A-1040 Vienna, Austria.

**Claims of efficacy / mechanisms of action / alleged indication**

Several reports describe Eastern European clinical trials using Ukrain for people with various types of cancer.\(^6\) The mechanism of action of Ukrain is unknown.
whereas the mechanism of action of thiotepa is known. The drug works by
damaging the DNA of cells, leaving the cell unable to divide.

Proposed activity of Ukrain includes cytotoxicity from effects on cellular oxygen
consumption, inhibition of DNA, RNA, and protein synthesis, and induction of
apoptosis. In vitro studies demonstrate weak inhibition of tubulin polymerization
causing arrest at G2/M phase of the cell cycle. Limited in vitro data support the
claim that Ukrain has selective cytotoxicity against cancer cells. Ukrain also is
promoted for its claimed ability to increase total T-cell count and T-helper
lymphocytes, while decreasing T-suppressor cells. In vitro activation of splenic
lymphocytes also was reported.2,7,8

Antineoplastic and immunomodulatory effects have been suggested. For
instance it has been suggested that the alkaloids interfering with the metabolism
of cancer cells diminish synthesis of DNA, RNA and proteins. It has also been
suggested that cellular oxygen consumption may be inhibited and thus a
programmed cell death of malignant cells is thought to be induced.9

The antimitotic actions of Ukrain have been found to be reversible in low doses
in vitro.10 They suggest that the lack of adverse effects observed in vivo may
be due to the lack of therapeutically effective dosages being administered,
therefore enabling cells to overcome the metaphase arrest and survive.

Various claims of efficacy of Ukrain exist, which have so far not been backed up
by compelling scientific evidence. For instance, the producer of Ukrain claims
that:11

- It is toxic against cancer cells at the therapeutic dose but not against
  healthy cells.
- It accumulates at the site of the tumour very rapidly after injection and
  brings about the encapsulation of larger tumours through anti-
  angiogenesis, thereby increasing operability.
- It regenerates the immune system.

Prevalence of use

No data exist to estimate the prevalence of use of Ukrain by cancer patients.

Legal issues

Ukrain has no drug approval in the EU. In the UK, Ukraine neither has a
marketing authorisation nor is it registered under the ‘traditional use’ label. It is
not FDA-approved in the US but is approved in Mexico, and the United Arab
Emirates as a standard anticancer medication. According to the manufacturer,
NSC 631570 (=Ukrain) has drug licences in several states of the former Soviet
Union (Ukraine, Georgia, Turkmenistan, Belarus/White Russia, Azerbaijan
Republic, Tadshikistan, and the Ukraine. Ukrain has also been designated as
an Orphan Drug for pancreatic cancer in the USA and in Australia.12
Dr Wassil Nowicky has submitted complaints to the European Court of Human Rights on account of “unlawful rejection of an approval application”.13

Costs and expenditures

The costs of Ukrain therapy are high; one course costs €700 for the medication alone, and the total treatment costs have been estimated to be around €3,000 per week.14 For ten intravenous injections of 10-20 mg the total cost of medication itself is approximately (€2,900). This includes shipping, handling, bank transfer and prescription.

Citation


Document history


References


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