

# Ifosfamide in advanced pancreatic cancer

## A 5-year experience

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**Summary.** Ifosfamide was studied in advanced pancreatic tumor at the National Cancer Institute, Cairo. Over five years, 25 patients received a daily dose of 1.8 g ifosfamide for five days, courses reported every 21 days. Complete remission was achieved in 1 patient and partial remission in 14 patients, an overall result of 60%, average duration of response being 12+ months. Mesna was used for uroprotection.

### Introduction

Ifosfamide has been screened in a phase II study in various tumors at the National Cancer Institute, Cairo. It proved effective in some solid tumors: breast, bladder and pancreas tumors, and lymphomas. We now report results achieved in pancreatic tumors.

### Materials and methods

The study population was made up of 25 patients with advanced pancreatic tumors attending the Medical Oncology Department of the National Cancer Institute, Cairo. Cancer of the pancreas is not very prevalent in Egypt, so these cases were collected during the years 1980–1985. There were 25 patients, 21 men and 4 women, their ages ranging from 25–63 years with an average of 45 years. All were diagnosed by history, physical examination, sonography, CT scan, and exploratory laparotomy with biopsy and tissue diagnosis. Workup of the patients included complete blood picture, chest X-ray, liver function tests, alkaline phosphatase, SGOT, and renal function tests, serum creatinin, and blood urea.

Once, pancreatic cancer had been diagnosed and confirmed by tissue biopsy and found inoperable, patients were scheduled to receive chemotherapy. Every patient received ifosfamide as follows: ifosfamide 1.8 g/m<sup>2</sup> daily by infusion for 5 consecutive days every 21 days, provided that the total leukocyte count was 4000/mm<sup>3</sup> or more and the platelet count 100000 mm<sup>3</sup> or more. To protect against hemorrhagic cystitis, mesna was given at a dose of 20% of the ifosfamide dose at 0, 4, and 8 h from the start of the ifosfamide infusion, also by infusion on each of the 5 consecutive days. The number of courses varied between 5 and 10.

### Results

Ifosfamide was well tolerated by all patients. Results achieved were: CR (complete remission) in one patient and PR (partial remission) in 14 patients – an overall response of 60% – stable disease in 5 patients and disease progression in 5 patients. Response was sought and assessed by clinical examination, sonography, and CT scan. The duration of response was 4–28+ months, with an average of 12+ months.

Toxicity took several forms: alopecia occurred in all patients (100%), at grade 3 all of them. Hematologic toxicities were anemia (grade I) in all patients and leukopenia (grade I) in 30% of cases. Gastrointestinal toxicities were minimal, leading to only a mild degree of nausea. Hemorrhagic cystitis was encountered in only one patient, (grade I), and in only one course.

### Discussion

Chemotherapy for pancreatic carcinoma has so far been disappointing [1]. Various drugs have proved ineffective or shown minimal results, such as 5-fluorouracil, *m*-amsa [2], DHAD [6] and mitomycin C. Combination chemotherapy with FAM (fluorouracil, adriamycin and mitomycin C) was claimed to yield good results in such tumors, but was proved ineffective by the Cancer and Acute Leukemia Group B study [5] and by Klapdor et al. [4].

The overall response of 60% yielded by the present study, like the results previously achieved by Hoefer-Janker et al. [3] (2 complete and 8 partial responses in 12 patients) proves the activity of ifosfamide in cancer of the pancreas. Combination chemotherapy was started a few months ago in this tumor.

### References

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