Table 1. Grade of control of vomiting during the first 24 h in three cycles of moderately emetogenic chemotherapy assessed by cycle (per cent evaluable patients in each cycle)

Grade of control	Cycle 1 (n = 161) Ondansetron n = 56(%)	Tropisetron n = 55(%)	Granisetron n = 50(%)	Cycle 2 (n = 139) Ondansetron n = 49(%)	Tropisetron n = 46(%)	Granisetron n = 44(%)	Cycle 3 (n = 130) Ondansetron n = 36(%)	Tropisetron n = 48(%)	Granisetron n = 46(%)
Complete	34 (60.7)	41 (74.5)	42 (84.0)*	36 (73.5)	31 (67.4)	31 (70.5)	25 (69.4)	35 (72.9)	37 (80.4)
Partial	12 (21.4)	7 (12.7)	7 (14.0)	8 (16.3)	3 (6.5)	7 (15.9)	4 (11.1)	8 (16.7)	5 (10.9)
Failure	10 (17.9)	7 (12.7)	1 (2.0)*†	5 (10.2)‡	12 (26.1)	6 (13.6)	7 (19.4)	5 (10.4)	4 (8.7)

*$P < 0.01$ granisetron vs. ondansetron; †$P < 0.05$ granisetron vs. tropisetron, ‡$P < 0.05$ ondansetron vs. tropisetron

European Journal of Cancer Vol. 30A, No. 7, pp. 1042–1043, 1994.

0959–8049/94 $7.00 + 0.00

CA50 as a Serum Marker for Pancreatic Carcinoma: Comparison With CA19-9

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CA19-9 IS A very well known serum marker for pancreatic cancer and other gastrointestinal neoplasms [1]. However, neither CA19-9 nor other routinely used serum markers have a fully satisfactory sensitivity and specificity in the diagnosis of pancreatic cancer [2]. New antigens have, therefore, been recently investigated.

CA50 is a tumour-associated sialylated glycoprotein ganglioside antigen which has been studied as a possible diagnostic tool for pancreatic cancer [3]. We compared the CA50 and CA19-9 serum levels in 50 healthy controls, 50 patients with pancreatic carcinoma and 71 patients with chronic pancreatitis. The pancreatic malignancies included 46 ductal adenocarcinomas, three acinar cell carcinoma and one cystadenocarcinoma. The differentiation degree of the tumour was available in 44 cases. The cancer was well differentiated in 22 cases, moderately differentiated in 10 cases and poorly differentiated in 12 cases. According to the Hermreck's staging cryteria [4], 2 patients were in stage I, 4 patients in stage II, 21 patients in stage III and 23 were in stage IV. 30 cancer patients were jaundiced.

The CA19-9 assay was performed by an immunoradiometric technique (GICAK, Sorin Biomedica, Saluggia, Italy), while CA50 levels were tested using an inhibition radioimmunoassay (Can Ag, Stena Diagnostic, Sweden). According to our previous experience [5], we chose a cut-off limit of 37 U/ml for CA19-9 while the cut-off limit for CA50 was 17 U/ml, as suggested by Holmgren [6].

CA19-9 levels were elevated in 40/50 (80%) patients with pancreatic cancer while CA50 was raised in 41/50 (82%) cases. 39 of the 50 (78%) patients had high levels of both markers, while in 41/50 (82%) cases at least one of the tests was positive. In the group of patients with chronic pancreatitis, a false positive test occurred in 6/71 (8.4%) patients using CA19-9, while CA50 was raised in 8/71 (11.3%) cases. In 5/71 (7.0%) patients both markers were above cut-off levels. No false positive results occurred in the controls. The specificity of the CA19-9 assay could be improved up to 98.6% by choosing a cut-off value of 100 U/ml, while the sensitivity remained at 72%. Choosing a higher cut-off value for CA50 (85 U/ml) in order to obtain a similar specificity, the sensitivity decreased to 46% (Table 1).

Both average serum levels and the rate of positive tests were related to the stage of the cancer [7, 8]. However, we were not able to find any cut-off value useful in predicting the resectability of the tumour.

The presence of jaundice, previously reported to influence CA19-9 levels [9], in our experience, did not affect the positivity rate of the test using either marker. The positivity of the tests was also unaffected by the degree of differentiation of the tumour.

CA50 is as sensitive as CA19-9 as a serum tumour marker for pancreatic cancer but, in our experience, this assay did not improve the diagnosis of the tumour.

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Revised 10 Nov. 1993, accepted 19 Jan. 1994.

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Table 1. Number of patients with high serum marker levels. Chronic pancreatitis (CHP) and pancreatic cancers (PC)

	CA50 > 17 U/ml	CA19-9 > 37 U/ml	CA50 > 85 U/ml	CA19-9 > 100 U/ml
CHP	8/71 (11%)	6/71 (8%)	0/71 (0%)	1/71 (1%)
PC	41/50 (82%)	40/50 (80%)	23/50 (46%)	36/50 (72%)

European Journal of Cancer Vol. 30A, No. 7, p. 1043, 1994.

0959-8049/94 $7.00 + 0.00

0959-8049(94)E0003-M

Epirubicin Plus a Calmodulin Inhibitor (Trifluoperazine) Activity in Advanced Pancreatic Adenocarcinoma

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THE RESPONSE rates obtained with chemotherapy in advanced and metastatic pancreatic cancer are generally poor [1]. The initially promising results obtained with ifosfamide [2] have not been confirmed [3, 4]. Anthracyclines and their analogue epirubicin have been shown to induce remissions [5]. Unfortunately, the multidrug resistance (MDR) phenotype, which involves anthracyclines, reduces their efficacy. Some calmodulin inhibitors, such as trifluoperazine, may revert MDR [6]. We report a phase II study designed to determine clinical response and toxicity of the epirubicin–trifluoperazine combination.

A total of 33 previously untreated patients with proven and measurable unresectable adenocarcinomas of the pancreas were treated with a combination of trifluoperazine 60 mg/24 h days 1–4, plus epirubicin 40 mg/m^2/day continuous infusion on days 2–4 in 28-day cycles. The median age was 57 years, with 22 males and 11 females. The median Karnofsky index was 80 (range 60–100). Of the 33 patients, 26 were evaluable for toxicity (six early deaths, one protocol deviation), 24 patients were evaluable for response (six early deaths, one protocol deviation, one toxic death, one refusal), and 32 patients were evaluable for survival (1 lost to follow-up).

There were 3 cases with grade 4 leucopenia, 1 case of septic death and 4 cases with grade 4 thrombocytopenia. Non-haematological toxicity was as follows: nausea and vomiting (1 patient), oral (4 patients), infection (4 patients) and alopecia (15 patients). There was no cardiac toxicity of sedative effects related to high dose trifluoperazine administration. Of 24 patients evaluable for response, 3 achieved an objective remission (response rate 13%; 95% confidence interval 2.6–32.3%), 14 (58%) had no change and 7 (29%) showed progression of the disease. The median time to progression was 3.5 months. The Karnofsky index was improved or unchanged in 23 (69%) patients during the treatment, and 13/21 (62%) no longer required analgesics. The median survival of the 32 evaluable patients was 5.3 months. The percentage of survival at 1 year was 22% and at 2 years 10%.

Epirubicin plus trifluoperazine did not show an improvement in response rate and survival in comparison with other treatment schedules without anti-MDR agents.

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Received 3 May 1993; accepted 11 Nov. 1993

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Acknowledgements—The authors wish to thank Mrs Conchita Florián for her data managing and editorial assistance.