This issue's topics

Oral mucositis

Oral mucositis is observed in up to 40% of patients treated with cytotoxic chemotherapy. Although not life-threatening, it can lead to increased pain, decreased quality of life and increased costs from hospitalisations. Anorexia and dehydration may also result leading to an increased need for the administration of parenteral nutrition and fluid replacement, as well as resulting in delays/dose reductions in chemotherapy treatments, thereby resulting in decreased efficacy.

The mucosal breakdown is due to several factors. Behavioural characteristics such as smoking and alcohol consumption and poor oral hygiene are adverse factors. In normal circumstances, oral epithelial cells are rapidly renewed every 7–14 days. However, this regeneration does not occur following treatment involving cytostatic agents or radiation. Secondary and systemic infection also result often exacerbated by the decrease in nutritional intake subsequent to the development of mucositis. Pain due to exposure of the underlying connective tissue is another distressing symptom.

In this issue, several authors report on studies associated with oral mucositis following chemotherapy/radiotherapy treatments.

Randomised comparison of GM-CSF and povidone/iodine/amphotericin B to treat mucositis

Hejna and colleagues randomised 31 cancer patients with chemotherapy-induced mucositis to receive either granulocyte/macrophage-colony stimulating factor (GM-CSF) or the antiseptic agent povidone/iodine and amphotericin B (AA regimen). GM-CSF treatment significantly reduced the duration of symptoms and resulted in a quicker resolution of mucositis compared with the AA regimen. The patient population was small because the study was stopped for ethical reasons following this intimation that there may be significant differences between the two treatments. However, the study populations in the two groups differed in age and some lifestyle factors, such as smoking and drinking, that may have biased the results; the GM-CSF group were younger and smoked and drank less. The GM-CSF group also had a slightly better history of oral hygiene, a factor known to be associated with the development of oral mucositis. Thus, this data will need to be confirmed in a larger, more homogenous population.

GM-CSF treatment is not effective in treating radiochemotherapy-induced mucositis in head and neck cancer patients

Sprinzl and colleagues report on a prospective randomised phase II trial involving 35 head and neck cancer patients with stage III/IV disease who had been treated with radiochemotherapy (two cycles of 30 Gy (2 Gy/day for 5 days), 10 mg/m^2 bolus mitomycin C and continuous infusion of 1000 mg/m^2 5-fluorouracil given during the first week of each cycle). The patients were then randomised into two groups and given either a topical application of GM-CSF ($n=17$) or conventional mouthwash ($n=18$). There were no differences between the two groups in the degree of oral mucositis, the perception of pain, the incidence of secondary infections and the changes in haematological parameters. Due to the cost of the GM-CSF treatment, the authors therefore stopped the recruitment of patients into the trial and state that "the topical administration of GM-CSF cannot be recommended for these patients".

Promising results following use of a preventative oral care protocol in children

Oral mucositis is one of the most severe complications seen in children following chemotherapy. In a prospective, comparative study, Cheng and colleagues have studied 42 children aged 6–17 years with haematological or solid tumours over an 8 month period; the control group was represented by the 21 children observed over the first 4 months of the study, whilst the intervention group (who were given an oral care protocol to follow) was represented by the 21 children enrolled over the next 4 months. The protocol consisted of tooth brushing, 0.2% chlorhexidine and 0.9% saline. Patients were evaluated twice a week for 3 weeks. In the intervention group, a 38% reduction in the incidence of ulcerative mucositis was observed and the severity and pain associated with oral mucositis were also significantly reduced in this group ($P=0.000002$ and $P=0.0001$, respectively). Thus, the use of this protocol to treat chemotherapy-induced oral mucositis appears to be warranted.

Oral pilocarpine reduces the incidence of chemotherapy-induced oral mucositis in adult cancer patients

Awidi and colleagues examined in a double-blind placebo-controlled cross-over study, the use oral pilocarpine (OP) in preventing oral mucositis. 32 adult cancer patients (mean age of 45.8 years; range 23–62 years) who received a total of 82 courses of a variety of chemotherapy regimens were given either OP (one 5 mg tablet every 8 h for 7 days) or placebo. Mucositis was observed in 20/41 courses given to patients treated with placebo compared with 6/41 given OP ($P<0.005$). The mucositis scores, assessed by two different methods, were also reduced for those patients given OP. The authors conclude that "OP is highly effective in preventing oral mucositis when given prophylactically to adult cancer patients receiving a variety of chemotherapy regimens".

These aforementioned studies are further discussed in this issue by Dr van der Rijt who also provides an overview of the field.

Forthcoming papers

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The relationship of epidermal growth factor receptor levels to the prognosis of unresectable pharyngeal cancer patients treated by chemo-radiotherapy
N. Magné, X. Pivot, R.-J. Bensadoun, *et al.*
A preliminary report of intra-operative radiotherapy (IORT) in limited-stage breast cancers that are conservatively treated
U. Veronesi, R. Orecchia, A. Luini, *et al.*
Improved survival after one course of perioperative chemotherapy in early breast cancer patients: long-term results from the European Organization for Research and Treatment of Cancer (EORTC) Trial 10854
J.A. van der Hage, C.J.H. van de Velde, J.-P. Julien, *et al.*
Phase II trial with ISIS 5132 in patients with small cell (SCLC) and non-small cell (NSCLC) lung cancer. A European Organization for Research and Treatment of Cancer (EORTC) Early Clinical Studies Group report
B. Coudert, A. Anthoney, W. Fielder, *et al.*
Impact of serum basic fibroblast growth factor on prognosis in human renal cell carcinoma
T. Rasmuson, K. Grankvist, J. Jacobsen, *et al.*
The costs of head and neck oncology: primary tumours, recurrent tumours and long-term follow-up
M. van Agthoven, Bm. van Ineveld, M.F. de Boer, *et al.*
A dose finding study of Carboplatin with fixed dose of Gemcitabine in 'unfit' patients with advanced bladder cancer
J. Bellmunt, R. de Wit, J. Albanell, J. Baselga

Paediatric
The potential tumour suppressor role for Caspase-9 (CASP9) in the childhood malignancy, neuroblastoma
D.R. Catchpoole, R.B. Lock

Epidemiology and Cancer Prevention
Recent decline in cancer mortality in Catalonia (Spain). A joinpoint regression analysis
E. Fernandez, J.R. González, J.M. Borràs, *et al.*
Breast cancer risk in women with a primary ovarian cancer—a case control study
K. Bergfeldt, B. Nilsson, S. Einhorn, P. Hall
Dietary fibres and ovarian cancer risk
C. Pelucchi, C. La Vecchia, L. Chatenoud, *et al.*

Experimental
Steroid-mediated inhibition of radiation-induced apopotosis in C4-1 cervical carcinoma cells is p53 dependent
M.C. Kamradt, S.W. Walter, L. Shafer, *et al.*
A role for c-myc in DNA damage-induced apoptosis in a human TP53-mutant small-cell lung cancer cell line
R. Supino, P. Perego, L. Gatti, *et al.*
The expression of the insulin-like growth factors (IGFs) and the IGF-binding proteins (IGFBPs) in the human gastric cancer cells
H.K. Yi, P.H. Hwang, D.-H. Yang, *et al.*
Axl receptor tyrosine kinase expression in human lung cancer cell lines correlates with cellular adhesion
A. Wimmel, D. Glitz, A. Kraus, *et al.*
E7070, a novel sulphonamide agent with potent antitumour activity *in vitro* and *in vivo*
Y. Ozawa, N.H. Sugi, T. Nagasu, *et al.*
The influence of surgical tumour resection on angiostatin levels and tumour growth—an experimental study in tumour-bearing mice
T.-S. Li, Y. Kaneda, K. Saeki, *et al.*