

Nursing of advanced colorectal cancer patients treated with Cetuximab combined with chemotherapy

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Abstract

Cetuximab is a new medication that has recently been approved for the treatment of advanced colorectal cancer. To date we have had little experience in using this targeted agent. Eleven patients in our hospital with advanced colorectal cancer were treated with cetuximab and chemotherapy. Based on the curative effect of this combination therapy, we have concluded that the following nursing practices make an important contribution to the patients' prognosis and wellbeing: to establish a good nurse-patient relationship, to increase patient understanding of the side effects, to standardize the medications, to observe and to deal with the side effects of the medications (for example skin reaction, neutropenia, and diarrhea), and to provide continuous mental health care support and education.

Key words: Cetuximab; advanced colorectal cancer; nursing

INTRODUCTION

Along with the development of modern biotechnology, biotherapy is so important that it is becoming the fourth treatment modality in treating and curing cancer, using preparation that act as biological response modifiers (BRM). Cetuximab is a BRM antibody. It is an immunoglobulin IgG1 humanized chimerical monoclonal antibody that can block the combination of EGF and TGF alpha with EGFR by binding to the receptor's extracellular domain. This results in an inhibition of the upregulated tyrosine kinase activities and thereby blocks the subsequent tumor growth^[1].

From Aug, 2007 to May, 2008, combination treatment of cetuximab and chemotherapy was been used in our hospital on 11 patients with advanced colorectal cancer. Based on the positive curative effect of the combination therapy, we have concluded that the nursing practices reported here have a positive impact on the patients' recovery and wellbeing.

CLINICAL DATA AND METHODS

Clinical data

From August 2007 to May 2008, 11 patients (7 male, 4 female) in our hospital with advanced colorectal cancer were enrolled in this study. All were treated with cetuximab plus CPT-11 or capecitabine and oxaliplatin. The average age of the patients was 52 (range, 48 to 65).

Treatments

The dosage of cetuximab for each injection is 400mg (I.V., once a week), and the first dose was 600 mg. Flanagan 25mg I.M. was used before each treatment in order to prevent allergic reactions. Chemotherapy started 24 hours after cetuximab, and continued for a cycle of 3 weeks. Clinical efficacy and nursing were evaluated after 6 weeks of chemotherapy and 8 weeks of cetuximab.

Observation of adverse reaction

The adverse reactions most frequently observed were skin reactions, including hypersensitivity and acne-like rash, diarrhea, fever, mucositis, nausea and vomiting.

Antihistamines-treatment was used in all 11 patients prior to cetuximab, and no hypersensitivity was observed. Block boil-like skin rash occurred in 7 cases,

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and diarrhea in 3 cases, with 2 of them using CPT-11, and 1 of them having fever along with a slight increase in blood pressure and palpitation immediately after the infusion of cetuximab.

NURSING

Nursing before treatment

The psychological condition of the patients undergoing chemotherapy is very changeable owing to their lengthy hospital stays, coupled with the disappointment of multiple cycles of chemotherapy, with the associated suffering from toxic reactions, and failure to reach the anticipated curative effect. With the introduction of a new targeted medication the patients also worry that this will impede the course of their normal treatment. Therefore, it is critical to explain the curative effect of this new medicine and its possible toxic side effects so as to increase the patient's confidence in the treatment.

To increase patient understanding of adverse reactions

It is necessary to proactively introduce the patients to the issue of toxic reactions during the treatment and help them to master self-protective measures. For example, those patients who have been treated with Tarivid were observed to have an acne-like reaction. They were asked to be thorough when cleaning the skin, to wear cotton underwear in order to reduce skin irritation, to observe, treat and report any abnormal skin reaction, and not to scratch the skin in order to prevent infection. Skin reactions occurred in 7 of the 11 cases in this group, and all reactions were well controlled by our careful nursing, and the patients did not experience any unnecessary psychological stress.

Nursing during the treatment

With the establishment of a normal saline intravenous access, 0.2 μ m or 0.22 μ m micro-pore size filters must be used for filtering during administration of the biotherapeutic agent. For the first dosage of cetuximab, instillation should be slow, beginning with 15 drops per min for the first 10 min, with 400 ml to 600 ml finished in approximately 120 min. On the following weeks the instillation duration can be 60 min, with a maximum instillation speed of 5 ml/min. Other chemotherapies can be used only 24 hours after the instillation of cetuximab. Pulse, respiration and oxygen saturation were measured during the course of treatment. Blood pressure was monitored every 5 min during the first 30 minutes and every 15 min thereafter. It is necessary to have first aid equipment immediately available in case of emergency. Close monitoring of the patient's condition should be continued for the first 15 min following cetuximab administration. One of the patients in the group was found to have increased blood

pressure, and arrhythmias and experienced heart palpitations during 3 rounds of the instillation. He recovered after slowing down the rate of instillation and symptomatic treatment, and continued to complete the treatment. Other patients had normal vital signs during the instillation of cetuximab.

NURSING ADVERSE REACTIONS

Skin nursing

Skin reactions are the most common adverse reactions occurring during the administration of cetuximab^[2]. The main cutaneous sign observed is an acne-like skin rash. Seven cases developed sore-like skin rashes. Acne-like skin rashes appeared on the head and neck 5 days after the first instillation of cetuximab and continued to develop after the second instillation, accompanied by itching. In addition to the doctor's orders of intravenous injection of calcium gluconate and oral chlorpheniramine, the nursing staff also helped the patients by maintaining good skin care, keeping skin clean, nail trimming, and encouraging the patients to avoid scratching, and not use alkaline soap or rough towels and generally avoid anything that would increase skin damage and infection. The patients were recommended to wear comfortable and soft clothes, and sun hat and sunglasses when outdoors, and to generally avoid exposure to sunlight, because the sun can increase skin lesions. Patients were recommended to not use local glucocorticoid^[3] and they were not allowed to smear stimulus medicine in certain areas. Symptoms of itching were alleviated in all 7 patients. No secondary infection occurred.

Nursing neutropenia

Neutropenia was found in 5 patients in the group, apparently related to the chemotherapy. The major nursing practices included daily Ultra-violet disinfection and ventilation of the ward, keeping the patients oral mucosa and skin clean, asking them to avoid crowded places, and the subcutaneously administration of recombinant human granulocyte colony-stimulating factor according to the attending doctor's orders^[4,5]. The white blood cell count of the 5 patients returned to within the normal range without any infection.

Nursing diarrhea

Three patients suffered diarrhea on the first day of cetuximab infusion. This consisted of a small volume of yellow, watery feces. Subsequently, one of the patients had diarrhea up to ten times a day. In addition to the administration of anti-diarrhea medicine and nutritional support, the nursing care included close observation of the frequency, consistency and the amount of the stool, ensuring good food hygiene, which included not eating raw, cold or dirty food, and

encouraging eating food with less residue, that was light and vitamin-rich. Patients were observed for signs of water and electrolyte disturbance, and were encouraged to have bed rest. The perianal perineum was washed with warm water and kept clean and dry, and zinc oxide cream was smeared on the area to protect perianal skin. In general, close attention was paid to disinfection and isolation to avoid cross-infection. With treatment, the diarrhea was reduced and finally stopped within a week. Particular care should be taken with patients treated with CPT-11 as 2 of our patients who had diarrhea were on CPT-11 chemotherapy.

Observation and nursing of blood pressure

Conventional ECG recording was used to closely monitor cardiac function during the use of cetuximab. One of the male patients, aged 65, was found to have an elevated blood pressure of up to 170/100 mmHg, along with palpitation and tachycardia during the initial 3 injections. Infusion was stopped immediately. The patient was given nifedipine, 10 mg, and bed rest for 4 hours, after which his blood pressure returned to normal and his heart palpitations and other symptoms disappeared. The patient's blood pressure did not increase again when the remained liquid was infused.

Mental health care and education

Cetuximab represents a major advance in antibody-based cancer therapy and it has been used both as a monotherapy and in conjunction with conventional chemotherapy^[6,7]. The drug is not widely used in China and patients know very little about it. The 11 patients had had more than one cycle of chemotherapy in the past and were suspicious of the efficacy of the new treatment. They were apprehensive, worried and pessimistic due to their previous experience with chemotherapy, the expense of the drugs, and the heavy financial burden placed on them and their families. We

proactively established a relationship of mutual trust with the patients and their families, and frankly explained the treatment process, as well as the possible prevention and response measures that would be used to alleviate side effects. The nursing staff also guided them in participating in their own treatment, and helped patients establish confidence that they could overcome their disease. Through effective nursing support and psychological guidance, all 11 patients were able to actively cooperate with their treatment, and 9 achieved the expected clinical effect.

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