Investigation of Combined Usage of Taxotere in Induction Chemotherapy of Head and Neck Neoplasms

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ABSTRACT **Background & Objectives** There were few reports about combined usage of Taxotere in induction chemotherapy of head and neck cancer. It was reported previously that the total response rate in advanced head and neck cancer using TPF regimen [Taxotere+cisplatin(DDP)+5-fluorouracil(5-Fu)] was 93%. This article preliminarily reported the response rate and side effects of TPF regimen in head and neck cancers. **Methods** Twenty-five cases with head and neck cancer in our hospital from January 1999 to June 2002 were reviewed. All cases underwent induction chemotherapy using TPF regimen (taxotere 75mg/ M^2, iv drip d1; DDP 20mg/ M^2, iv drip, d1-3; 5-Fu 300mg/ M^2, iv drip, d1-3; repeat per 3 weeks). All of the cases were followed up during chemotherapy and their response was evaluated after induction chemotherapy. The side effects were recorded. **Results** Six cases (24.0%) and 12 cases (48.0%) presented complete remission (CR) and partial remission (PR) after induction chemotherapy using TPF regimen, respectively. There were 7 cases with minimal or none response. The total response rate (CR+PR) after TPF induction chemotherapy was 72.0%. The response rate in oral cancer and the cancer in other primary sites including the base of tongue, larynx, larygopharynx, and nasopharynx were compared. It demonstrated that the response rates were 63.6%(7/11) and 71.4%(10/14), respectively, and there was no significant difference between the two groups (p=0.504). In this study, there were 9 cases that relapsed after first treatment. Their response rate after TPF induction chemotherapy was 44.4%(4/9), which had 1 case of CR and 3 cases of PR. In this study, 36.0% (9/25) patients had leukopenia including 16.0%(4/25) of degree 1, 16.0%(4/25) of degree II, 4.0%(1/25) of degree III according to WHO standard; 64% (16/25) of patients presented side effects in alimentary system, but the level was all under degree II according to WHO standard. The side effects in kidney in all patients were degree 0. Other side effects included hair loss but their degrees were all under II according to WHO standard. **Conclusions** Induction chemotherapy using TPF regimen in local advanced head and neck cancers could have good chemotherapy response. It was effective to local relapse cases after first treatment and its side effects are tolerable.

Key Words Head and neck neoplasms; Taxotere; Induction chemotherapy

Taxotere is a new anticancer drug which has specific mechanism to kill cancer cells. It has come into clinical investigation since the early 1980s. After that more and more reports showed this drug could improve chemotherapy response. The regimen using Taxotere were different. It could be used singularly, but the trend was to use Taxotere with other drugs. Inductive chemotherapy is a part of multimodality management of head and neck cancers, which was said to improve radiation reaction response, surgical resection, vital organ function preservation, and lessen distance metastasis. The conservative chemotherapy regimen in head and neck cancers was DBF [cisplatin (DDP)+ 5-fluorouracil(5-Fu)+bleomycin(BLM)] which could have more or less 60% chemo-response. Now few reports were about Taxotere in head and neck cancers. Recent years we have used TPF regimen (Taxotere+DDP+5Fu) to treat local advanced head and neck cancers. In this article we will report its chemotherapy response and side effects. The aim here is to know the efficiency of TPF regimen in the inductive chemotherapy in head and neck cancers.

MATERIAL AND METHODS

Clinical Cases

All patients with head and neck cancer treated with Taxotere hospitalized in our hospital from January 1999 to June 2002 were reviewed. There were 25 cases found to be treated by combined usage of Taxotere in inductive chemotherapy. All of the patients were managed in out-patient or hospitalization, which were followed up during treatment. In this group there were 22 male and 3 female.

The oldest age was 75 years old and the youngest was 35 uears old with the mean age 54. The primary site included oral cavity 11 cases (including 7 tongue and 4 oral floor), tongue base 1 case, larynx 4 cases, larygopharynx 4 cases, and nasopharynx 5 cases. The pathology of all the cases were squamous cell carcinomas, including 5 cases with low differentiated. There were 9 patients treated firstly used other way and relapsed. The rest 16 cases included 1 case of T2, 6 cases of T3 and 9 cases of T4. 10 patients had cervical metastasis (4 cases of N1 and 6 cases of N2). There were 1 case of stage II, 1 case of stage III and 14 cases of stage IV. All of the patients had no distant metastasis.

Clinical Management

All of the 25 patients had undergone multimodality treatment including inductive chemotherapy plus surgery 14 cases, inductive chemotherapy plus radiation 9 cases and inductive chemotherapy plus surgery and radiation 2 cases. All of inductive chemotherapy regimen was TPF (Taxotere+DDP+5Fu). TPF was administrated as follows: Taxotere(RHoNE–Poulenc Rorer)75mg/ M2, iv drip, d1; DDP 20mg/ M2,iv drip,d1–3; 5Fu 300mg/ M2, iv drip, d1–3; repeated per 3 weeks. There were 13 patients undergone two segment of chemotherapy, 7 with three segment and 5 with four segment. It was defined effective as CR+PR. At the same time the side effects were recorded to evaluate the TPF regimen.

Statistical Analysis

SPSS7.0 statistical software suite was used to carry on the statistical analysis and to confirm the chemotherapy response and side effects of TPF inductive chemotherapy.

RESULTS

Chemotherapy Response

The response was evaluated after TPF regimen completed. Partial cases were evaluated combined with image data like CT scan. After TPF inductive chemotherapy there were 6 patients (24.0%) of complete remission(CR), 12 patients (48.0%) of partial remission (PR), and 7 patients of minimal or none response. The effective rate (CR+PR) was 72.0%. This manifested that there was better chemotherapy response rate of TPF regimen in the inductive chemotherapy of head and neck cancers.

The Chemotherapy Response in the Relapse Patients after First Treatment

9 patients who wear treated firstly with other way in other hospital relapsed and refered to our hospital. There were 1 patient of CR and 3 of PR after being undergone TPF inductive chemotherapy. The total effective rate was 44.4% (4/9). This showed that TPF inductive chemotherapy could receive certain effectiveness even in primary relapse patients after first treatment.

Side Effects of Chemotherapy

There were few side effects after TPF inductive chemotherapy in our group and most of these were receivable by patients. The most side effects in this group after TPF inductive chemotherapy were leukopenia. 36.0% (9/25) presented leukopenia, which included 16.0%(4/25) of degree Ⅰ,16.0%(4/25) of degree Ⅱ, 4.0%(1/25) of degree Ⅲ according to WHO standard. The patients could reabilitate soon after supporting treatment. 64%(16/25) of patients presented side effects alimentary system, but the level was all under degree Ⅱ. The side effects in kidney in all patients were degree 0. Other side effects included hair loss but their degrees were all under II according to WHO standard.

DISCUSSION

In our group the total effective rate of inductive chemotherapy using TPF regimen was 72.0%, which was comparative to the conservative DBF regimen. This article was only the preliminary report of TPF inductive chemotherapy. There are more patients with advanced head and neck cancer in our group including 96% of stage Ⅲ, Ⅳ and relapse patients. We can see here that local advanced head and neck cancer can also have better response to TPF inductive chemotherapy. At the other hand, there were 44.4% of relapse patients who reacted to TPF regimen, which manifested that TPF could also have better effect in recurrent head and neck cancer. All of this shows TPF inductive chemotherapy in head and neck cancer can have better response rate, which is suitable to wide usage in clinical condition.

The common regimen using Taxotere reported includes as follows: singular usage of Taxotere, TIP (Taxotere + Ifosfamide + DDP), TPF(Taxotere +

DDP+ 5–Fu), and TPFL(Taxotere + DDP + 5–Fu + Leucovorin). Their response rates are different. Dreyfuss et al used sigular Taxotere to treat out–patients with advanced head and neck cancers(100 mg/m2, 1 hour iv drip,repeat per 3 weeks), and got 42% total effective rate [1]. ECOG reported its effective rate being 40%. The effective rate was in the range of 27% to 43% when using Taxotere sigularly, but now the trend is to use it in combined regimen [2,3]. Shin et al reported TIP regimen to treat relapse or metastasis patients and got the response rate of 58% with 17% of complete response[4]. Colevas et al used TPFL to manage local advanced head and neck cancer, and their total response rate was 100%. 61% patients had CR and 39% of PR. 86% and 91% of patients had CR and PR pathologically respectively[5]. Posner et al reported the CR and PR rate were 40% and 53% respectively [6]. Glisson et al reported response rate using docetaxel with cisplatin arrived at 90% in neoadjuvant setting in head and neck cancers[9]. In our group the total response rate using TPF regimen was 72.0% which was lower than other reports. The probable reasons here maybe there were many patients who were local advanced or relapse.

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