INTRODUCTION

Surgery represents the majority of treatment for small, well-localized, and low-grade tumors. However, the common advanced T-stage (T3/T4), is deprivation of patients’ quality of life because it has to remove the surrounding normal tissues in order to remove the tumor completely. Neutron Capture Therapy (BNCT) is high linear energy transfer (LET) radiation therapy, which means that the response of BNCT is not tumor stage dependent but rather LET dependent. BNCT is an effective method for treating recurrent tumors with limited access to surgery. Although the visible cure rate of BNCT is generally lower than those of the conventional radiation therapy, the cure rate for advanced salivary gland carcinomas is higher than that for other cancers. A recent study demonstrated that BNCT is the potential curative therapy for patients with salivary gland carcinomas without causing any serious adverse effects, irrespective of whether the primary site of cancer was near the eye.

METHODS AND MATERIALS

In this study, we report the preliminary results of BNCT on 12 patients with advanced salivary gland carcinomas. The patients were treated at the Radiation Oncology Research Laboratory, Research Reactor Institute, Kyoto University. BNCT was performed at the Japan Convention Center. All patients were newly diagnosed T4 advanced cancer were registered from October 2003 to September 2008. Two patients with recurrent cancers and 3 with newly diagnosed salivary gland carcinomas were treated. The median duration of the follow-up period was 14 months. The median overall survival time was 32 months. Three of 9 patients are alive and remaining patients died of distant metastasis. All patients are enrolled in a long-term follow-up study.

RESULTS

1. Patients and tumor characteristics

2. Parameters of BNCT and doses delivered to the tumor and normal organs

3. Tumor response and adverse effects

REFERENCES


CONCLUSIONS

Our preliminary results demonstrate that BNCT is the potential curative therapy for patients with salivary gland carcinoma without causing any serious adverse effects, irrespective of whether the primary site of cancer was near the eye.