Consent for research study

Dose constraints for the temporal lobes during the optimization of intensity-modulated radiotherapy treatment plans for nasopharyngeal carcinoma

This is a clinical trial (a type of research study). Clinical trials include only patients who choose to take part. Please take your time to make your decision. Discuss it with your friends and family. The National Cancer Institute (NCI) booklet, "Taking Part in Clinical Trial: What Cancer Patients Need To Know", is available from your doctor.

You are being asked to take part in this study because you have nasopharyngeal carcinoma.

Title: Dose constraints for the temporal lobes during the optimization of intensity-modulated radiotherapy treatment plans for nasopharyngeal carcinoma.

Purpose: The purpose of this study is to evaluate the feasibility of dose constraints based on D1cc and Dmax for the temporal lobes following IMRT for NPC.

Outcome measures:

Primary outcome measure: The incidence of radiation-induced temporal lobe injury at 5 years.

Secondary outcome measure: Local recurrence-free survival at 5 years.

Sponsor: Jiangxi Cancer hospital

Background

Intensity-modulated RT (IMRT) is a major breakthrough in the treatment of NPC, and it was capable of producing highly conformal dose distributions with steep dose gradients and complex isodose surfaces [3]. The design of appropriate dose constraints for the organs at risk (OAR) during the optimization of IMRT treatment plans can enable significantly better OAR sparing and reduce subsequent complications. IMRT offers detailed dosimetric parameters for temporal lobes based on dose-volume histogram (DVH). In our previous study, we reported that the D1cc (the dose to 1ml of the TL volume) was the only independent predictor for radiation-induced TLI and estimated that the biologically equivalent tolerance doses at 2Gy for the 5%,10% and 50% probabilities at 5 years to develop TLI were 62.83Gy equivalents, 66.67Gy equivalents and 77.58Gy equivalent, respectively. Recently, we apply on five NTCP models, including (1) Lyman model and (2) logit-formula with dose-volume histogram (DVH) reduced to generalized equivalent uniform dose (EUD), (3) serial reconstruction unit (RU) model, (4) Poisson-EUD model, and (5) mean dose model for TLI to a population of 351 NPC patients treated with IMRT. As assessed qualitatively and quantitatively, the Lyman-EUD model fitted the data very well. The tolerance dose (TD) for the 5% and 10% probabilities of TLI development were 77 Gy and 80.4 Gy for Dmax (the maximum point dose) in 2-Gy fractions (α/β ratio, 3) in the current study. D1cc and Dmax were the significant predictors of TLI development. The purpose of this study is to evaluate the feasibility of dose constraints based on D1cc and Dmax for the temporal lobes following IMRT for NPC.

Procedure: About 350 patients will take part in this study. All patients will receive the following

Treatment:

Radiation therapy will be given once a day, five days a week. Depending on the stage of your disease, you may also receive chemotherapy, including induction chemotherapy, concurrent chemotherapy and adjuvant chemotherapy. The regimens of induction chemotherapy and adjuvant chemotherapy included docetaxel and cisplatin (DP), gemcitabine and cisplatin (GP) and 5-Fu and cisplatin(PF). The DP protocol consisted of docetaxel 75mg/m^2 IV on day 1, cisplatin 75 mg/m^2 on day1. The GP protocol consisted of gemcitabine 1.0g/m^2 IV on day 1, 8, cisplatin 75 mg/m^2 on day1. The PF protocol consisted of cisplatin 80mg/m^2 IV on day 1 and 5-Fu 800mg/m^{2}d continuously IV on day 1-5. For patients who receive induction chemotherapy, both DP, GP and PF are repeated every 3 weeks for 2-3 cycles. This is followed by cisplatin 30mg/m^2 IV weekly or cisplatin 80mg/m^2 IV on day 1,22 during radiation. For patients who received adjuvant chemotherapy, regimens are repeated every 3 week for 3 cycles.

Risks of the study： While on the study, you are at risk for these side effects. You should discuss these with the researcher and/or your regular doctor. There also may be other side effects that we cannot predict. Other drugs will be given to make side effects less serious and uncomfortable. Many side effects go away shortly after the radiation is stopped, but in some cases side effects can be serious or long-lasting or permanent.

Risks associated with radiation therapy: Redness and irritation of skin within the treatment area. Difficulty, pain or burning sensation when swallowing. Dry mouth may remain after treatment. Hair loss at the treatment area most likely permanent. Nausea and/or vomiting. Loss of appetite and/or taste. Skin in treatment area may remain permanently dry. Decrease in blood counts while undergoing treatment. Fatigue. Injury to bone or tissue of the neck. Thyroid gland dysfunction requiring thyroid hormone pills in the future. Irritation of the spinal cord. Temporal injury.

Risks associated with chemotherapy: Decrease in blood counts, which can lead to a risk of infection and bleeding. Loss of appetite and/or taste. Nausea and/or vomiting. Fatigue. Hearing loss or ringing in the ears. Rash. Loss of hair. Decreasing ability of the kidneys to handle the body's waste. Allergic reactions. Decrease in liver function.

Benefits to taking part in the study: If you agree to take part in this study, there may or may not be direct medical benefit to you. We hope the information learned from this study will benefit other patients with head and neck cancer in the future.

Other options: You may choose to not participate in this study. Other treatments that could be considered for your condition may include the following: (1) standard radiation therapy delivery with or without chemotherapy during and/or after the radiation; (2) chemotherapy, (3) no treatment except medications to make you feel better. With the latter choice, your tumor would continue to grow and your disease would spread. These treatments could be given either alone or in combination with each other. Your doctor can tell you more about your condition and the possible benefit of the different available treatments. Please talk to your regular doctor about these and other options.

Confidentiality: Efforts will be made to keep your personal information confidential. We cannot guarantee absolute confidentiality. Records of your progress while on the study will be kept in a confidential form at our institution.

Rights: Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled. We will tell you about the new information from this or other studies that may affect your health, welfare, or willingness to stay in this study.

Signature

I have read all the above, asked questions, and received answers concerning areas I did not understand. I have had the opportunity to take this consent form home for review or discussion. I willingly give my consent to participate in this program. Upon signing this form I will receive a copy. I may also request a copy of the protocol.

_____	_____	_____
Patient Name	Patient Signature	Date
_____	_____	_____
Name of Person Obtaining Consent	Signature	Date