ESTRO-ACROP guideline "target delineation of glioblastomas".

Niyazi M¹, Brada M², Chalmers AJ³, Combs SE⁴, Erridge SC⁵, Fiorentino A⁶, Grosu AL⁷, Lagerwaard FJ⁸, Minniti G⁹, Mirimanoff RO¹⁰, Ricardi U¹¹, Short SC¹², Weber DC¹³, Belka C¹.

Abstract

BACKGROUND AND PURPOSE: Target delineation in glioblastoma (GBM) varies substantially between different institutions and several consensus statements are available. This guideline aims to develop a joint European consensus on the delineation of the clinical target volume in patients with a glioblastoma (GBM).

MATERIAL AND METHODS: A literature search was conducted in PubMed that evaluated adults with GBM. Both MeSH terms and text words were used and the following search strategy was applied: ("Glioblastoma/radiotherapy" [MeSH] OR "glioblastoma" OR "malignant glioma" OR high-grade glioma) AND ((delineation) OR (target volume) OR (CTV) OR (PTV) OR (margin) OR (recurrence pattern) OR (contouring) OR (organs at risk)). In parallel, abstracts from ESTRO and ASTRO 2010-2015 were analysed and separately reviewed. The ACROP committee identified 14 European experts in close interaction with the ESTRO clinical committee who discussed and analysed the body of evidence concerning GBM target delineation.

RESULTS: Several key issues were identified and are discussed including (i) pre-treatment steps and immobilization, (ii) target delineation and the use of standard and novel imaging techniques, and (iii) technical aspects of treatment including planning techniques, and fractionation. Based on the EORTC recommendation focusing on the resection cavity and residual enhancing regions on T1-sequences with the addition of a 20mm margin, special situations are presented with corresponding potential adaptations depending on the specific clinical situation.

CONCLUSIONS: Currently, based on the EORTC consensus, a single clinical target volume definition based on postoperative T1/T2 FLAIR abnormalities is recommended, using isotropic margins without the need to cone down. A PTV margin based on the individual mask system and IGRT procedures available is advised, usually of the order of 3-5mm.

Copyright © 2015 Elsevier Ireland Ltd. All rights reserved.

KEYWORDS: ACROP; Delineation; ESTRO; Glioblastoma; Radiotherapy; Target volume

PMID: 26777122 DOI: 10.1016/j.radonc.2015.12.003