EORTC
European Organisation for Research and Treatment of Cancer
AISBL International Non-Profit Association under Belgian law IVZW

EORTC
Avenue E. Mounierlaan 83 / 11
Brussel 1200 Bruxelles
België - Belgique
Tel : +32 2 774 16 11
Fax : +32 2 772 35 45
E-mail : eortc@eortc.be
Web : http://www.eortc.be

EORTC 26081-22086

Phase III Intergroup Study of Radiotherapy versus Temozolomide Alone versus Radiotherapy with Concomitant and Adjuvant Temozolomide for Patients with Newly Diagnosed Anaplastic Oligodendroglioma or Anaplastic Mixed Glioma with Chromosomal Co-delections of 1p and 19q.

QART procedure
Guidelines for investigators, version 1.0 – 2010 July

Contact persons:

- **EORTC Headquarters:**

Akos Gulyban – QART Manager
Akos.Gulyban@eortc.be
Tel: +32 2 774 10 52

Anouk Allgeier – Project Manager
anouk.allgeier@eortc.be
Tel: +32 2 774 16 90

General email address in case of problems submitting a FQ or an ERDA: facilityquest@eortc.be

- **QART responsible(s):**

Frederic Dhermain – EORTC ROG Study Coordinator
Sara Erridge – EORTC ROG Study Coordinator / QART reviewer
Damien Weber – EORTC QART reviewer

Overview of links:

- General EORTC ROG website:

http://groups.eortc.be/radio/Qualityassurance.htm

- Minimum requirements of the EORTC ROG:

http://groups.eortc.be/radio/MinimumRequirements.htm

- More information on External Reference Dosimetry Audit (ERDA):

http://groups.eortc.be/radio/ERDA.htm

- Digital IMRT benchmark dataset available:

http://www.eortc.be/services/download/ROGQA/ - file name: *IMRT Benchmark*
http://atc.wustl.edu/credentialing/ATC_reports/IMRT_Benchmark_03Nov09.pdf (instruction)

- To confirm you have uploaded the DR or ICR, please complete the "Digital Data Submission Information (DDSI) form":

http://atc.wustl.edu/forms/DDSI/ddsi-eortc.html

EORTC 26081-22086
QART Guidelines 1.0

Dear Investigator,

Thank you very much for showing an interest in participating in this EORTC phase III study for patients with newly diagnosed anaplastic glioma. Referring to the chapter of the Group Specific Appendix "Quality Assurance for Radiotherapy" (Chapter 7.4.1, GSA version 1.1), a specific radiotherapy quality assurance procedure has been designed to clarify the technical aspects of the radiotherapy in this trial and to decrease the inter-institutional variability. You will find below all the relevant instructions.

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The **upfront** QA procedure consists of the following parts:

For institutions using 3D-CRT technique	For institutions using IMRT technique*
Facility Questionnaire (FQ)	Facility Questionnaire (FQ)
External Reference Dosimetry Audit (ERDA)	External Reference Dosimetry Audit (ERDA)
Dummy Run (DR)	Dummy Run (DR)
	IMRT benchmark/Complex Dosimetry Check (CDC)

** Centers may change their RT technique from 3D-CRT to IMRT, but all IMRT QA procedures should be successfully completed before using this RT technique within this trial.*

The QA procedure **during the trial**:

- Part III: Limited Individual Case Review (ICR)**

** All patients' digital treatment data should be submitted prior to the start of radiotherapy:
- *The first patient per center + 1 out of 5 randomly selected patients will be reviewed.*
- *In case the initial (first) or the random (1/5) review results in minor or major protocol deviation, supplementary case reviews may take place for the participant centers.*

EORTC QART level I. Facility Questionnaire (FQ) and External Reference Dosimetry Audit (ERDA)

Mandatory before authorization

All institutions must have a valid **Facility Questionnaire** (FQ) and valid **External Reference Dosimetry Audit** (ERDA) to be authorized to randomize patients.

For submitting the FQ, please visit the EORTC Radiation Oncology Group (ROG) website under this address: http://groups.eortc.be/radio/Qualityassurance.htm and click on "ROG Facility Questionnaire". Please read carefully the minimum requirements of the EORTC ROG (http://groups.eortc.be/radio/MinimumRequirements.htm) before the submission. FQ information must be kept updated when equipment is replaced or if other circumstances change. The FQ is valid for 2 years; after expiration, the update of existing FQ is mandatory to consider it as valid.

To ensure the delivered dose is within 3% between sites, we are requesting proof of valid (not older than 2 years) External Reference Dosimetry Audit. This document can be **pdf** or **scanned images**. For more information, please visit the EORTC ROG website under this address: http://groups.eortc.be/radio/ERDA.htm. The ERDA should be sent to the facilityquest@eortc.be e-mail address.

If there is an existing EORTC Facility Questionnaire for your institution, you will receive by e-mail a status report from EORTC, including a link to check and/or update your FQ if necessary.
A responsible radiation oncologist, physicist and radiation technologist of your Radiotherapy Department should be involved in the submission of the FQ and provide the ERDA document.

If you would like to update your existing FQ, please ask for the update link by sending a mail to the facilityquest@eortc.be e-mail address with **your EORTC institution number in the subject of the mail**.

If you have problems with the FQ and/or ERDA, you can always contact us at the facilityquest@eortc.be e-mail address.

Please notice that incorrect submission of FQ or delayed ERDA proof will delay your site authorization.

IMPORTANT: General instructions for planning and uniform naming convention

To ensure data consistency and integrity within the EORTC QART platform, each institution is requested to use the following uniform names of structures during the planning procedures. These conventions have been developed by the Advanced Technology Consortium (ATC). You can find more information on the general principles of this effort at the following link: http://atc.wustl.edu/resources/RTOG-ATIC/ATIC-ATC_Uniform_Tissue_Names.pdf

To apply this recommendation to the current protocol, we are highly recommended the use of the following conventions when defining structures:

Structure name (protocol)	Uniform name (ATC)	Delineation mandatory?
GTV	GTV	**YES**
CTV1 / CTV2*	CTV1 / CTV2	**YES**
PTV1 / PTV2*	PTV1 / PTV2	**YES**
Brainstem	BRAINSTEM	**YES**
Eyes (left / right)	EYE**_L** / **_R**	**YES – separately**
Eye lens (left/right)	LENS**_L** / **_R**	**YES – separately**
Optic nerves (left/right)	OPTIC_NRV**_L** / **_R**	**YES – separately**
Optic chiasm	CHIASM	**YES**
Cochleas (left/right)	COCHLEA**_L** / **R**	**YES**
Pituitary gland	PITUITARY	**YES**
Uninvolved Brain Tissue	BRAIN-PTV	**YES**
Parotid glands (left/right)	PAROTID**_L** / **_R**	**Optional - separately**

*in case for target delineation the US (cone-down/boost) approach is selected instead of the EORTC (single-phase)

IMPORTANT: Anonymization of the Data

To comply with GCP, patient (digital) data must be anonymized prior to being sent to EORTC. In case your institution does not have a DICOM-RT anonymization solution, EORTC recommends using the DICOMpiler software developed by the Image-Guided Therapy Center (ITC). Please note that some DICOM anonymisation solutions designed for imaging data alone may not fully anonymise DICOM-RT data. The software is available here:
http://itc.wustl.edu/DICOMpiler/index.htm
and a step by step instructions available:
http://groups.eortc.be/radio/res/barsa2010_mars/eortcitcdicompliersoftware_wrb_20apr2010.pdf

In case you are using this way of DICOM-RT anonymization, we recommend the following conventions to be used:

	DR	ICR	IMRT Benchmark
Sponsor		EORTC	
Protocol		26081	
Case	DR	*SeqID (by NCCTG)*	IMRT
Initials	DR	*Patient initials*	IMRT

In case of questions related to the software, please contact directly ITC:

Image-guided Therapy Center

4511 Forest Park Ave., Suite 200

St. Louis, MO 63108

E-mail: itc@castor.wustl.edu

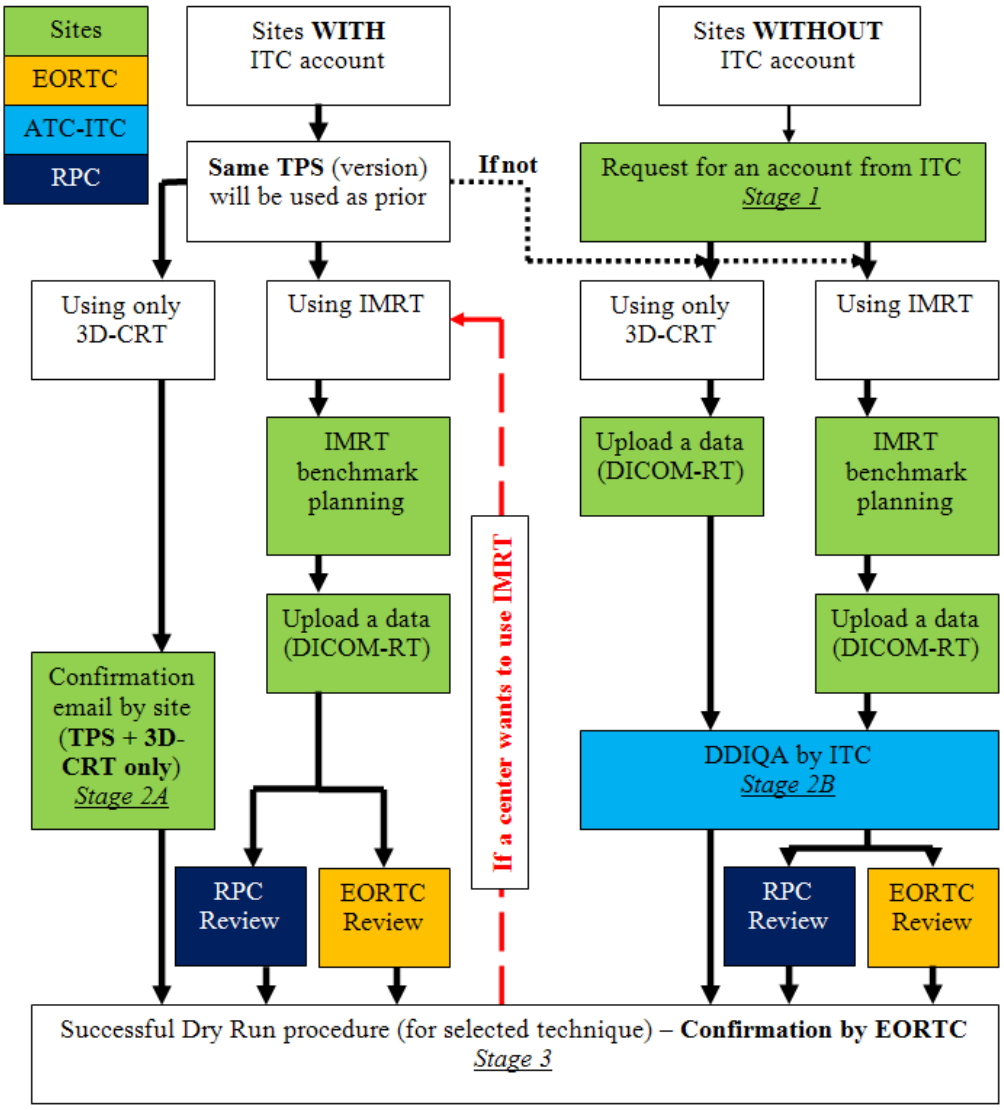
Phone: +1 314-747-5415

FAX: +1 314-747-5423

EORTC QART level II. Dry Run procedure

Mandatory prior to authorization

All other participants must perform a dry run procedure (including its review) before recruiting patients into this study. The DR procedure consists of multiple steps:



1. Requesting ITC account

Not needed: **1. if the institution has an existing account (from previous trial)**

Contact the ITC (itc@castor.wustl.edu) and request an SFTP account for digital data submission. Include

- Your name
- Institution's name and EORTC nr. and
- Your full contact address.

Please obtain your SFTP account on time. Allow **3 business days to process** your account request.

2. **[Using IMRT] Follow the instructions as it is described in the EORTC QART level V. IMRT accreditation / Complex Dosimetry Check (CDC) chapter**

3. **Exporting the data from treatment planning system**

Not needed:	**1. if institution has an existing account (from previous trial)**
	2. The TPS export was uploaded to ITC before

Make sure that your treatment planning system (TPS) is able to export the DR case in DICOM-RT format including the

DICOM images	**(planning CT)**
DICOM-RTSTRUCT	**(contours)**
DICOM-RTDOSE	**(3D dose matrix)**
DICOM-RTPLAN	**(plan information)**

Treatment plan specification (DICOM RT Plan file or RTOG Data Exchange Beam Geometry files) **for each fraction group** (concurrently treated set of beams). Note that plans involving boost fields may consist of multiple fraction groups.

3D dose distribution (absolute) **for each fraction group** (concurrently treated set of beams) delivering a protocol compliant dose.

All commercial systems that are known to have this capability are listed at http://atc.wustl.edu/credentialing/atc_compliant_tps.html.

4. **Uploading the dataset**

After the export, all data should be sent by Secure File Transfer Protocol (SFTP) to the ITC SFTP server. The procedure is described at the **Upload procedure to the ATC/ITC** chapter.

Once proper submission is received, submitted Dummy Run cases will be reviewed by the trial QART team.

5. **Completing the DR procedure**

After the review is finished, your site will be informed about the result (“accepted”, “additional information is needed” or “adjustments and re-submission is needed”). Please note the Dummy Run must be completed successfully prior the site authorization.

EORTC QART level III. Limited Individual Case Review

(Please note: data for ALL patients should be submitted)

All patients' digital treatment data should be submitted prior to the start of radiotherapy:

- The first patients per center will be verified by the EORTC trial QART team.
- Afterwards 1 out of 5 randomly selected patients will be centrally reviewed.

In case the initial (first) or the random (1/5) review resulted in minor or major protocol deviation, supplementary case reviews may take place for the participant centers.

1. Exporting the data from treatment planning system

Make sure that your treatment planning system (TPS) is able to export the DR case in DICOM-RT format including the

DICOM images	**(diagnostic images used for target definition)**
DICOM images	**(planning CT)**
DICOM-RTSTRUCT	**(contours)**
DICOM-RTDOSE	**(3D dose matrix)**
DICOM-RTPLAN	**(plan information)**

Treatment plan specification (DICOM RT Plan file or RTOG Data Exchange Beam Geometry files) **for each fraction group** (concurrently treated set of beams). Note that plans involving boost fields may consist of multiple fraction groups.

3D dose distribution (absolute) **for each fraction group** (concurrently treated set of beams) delivering a protocol compliant dose.

All commercial systems that are known to have this capability are listed at http://atc.wustl.edu/credentialing/atc_compliant_tps.html.

2. Uploading the dataset

After the export, all data should be sent by Secure File Transfer Protocol (SFTP) to the ITC SFTP server. The procedure is described at the **Upload procedure to the ATC/ITC** chapter.

Once proper submission is received, submitted Individual Case will be reviewed by the trial QART team.

3. Completing the ICR procedure

After the review is finished, your site will be informed about the result ("accepted", "additional information is needed" or "adjustments and re-submission is needed").

Upload procedure to the ATC/ITC

1. Uploading the dataset

After the export, all data should be sent by Secure File Transfer Protocol (SFTP) to the ITC SFTP server.

Several SFTP program and instructions are available at:

http://atc.wustl.edu/home/news/SFTP.html

(Login name and password are provided for each investigator separately)

1. Connect via SFTP client program to the **ITCsubmit.wustl.edu** server (IP address **128.252.17.87**) and login with the provided username and password.
2. Change to the "incoming" directory. ("**cd incoming**")
3. Create a new sub-directory within "**incoming**" with a name that is pertinent to the data that you are submitting ("**mkdir Case01423totalplan**"). Please do not use spaces or punctuation marks other than "-", "_" and "." in naming files and directories. Also, as the local investigator, you have the responsibility to ensure that **all patient** data are **anonymized** at the institutional level **prior to submission**.

2. Completing the Digital Data Submission Information (DDSI) form

DDSI form available at http://atc.wustl.edu/forms/DDSI/ddsi-eortc.html.

Click on "online Form"

Username: **eortc-forms**

Password: **data4itc**

Select the "**NCCTG N0577/EORTC 26081**" protocol

3. Notify ITC about the submission

Send an e-mail to itc@castor.wustl.edu to indicate that you have uploaded data. Please identify the study group (EORTC), protocol (26081), and case number (SeqID / Dry Run / IMRT Benckmark) for the submission as well as your contact information.

In case of incorrect submission, one of the QART team members will contact your site so you can revise it and/or solve the technical problems and submit it again.

EORTC QART level V. IMRT accreditation / Complex Dosimetry Check (CDC)

1. Downloading the IMRT benchmark case

The IMRT benchmark CT dataset is available here:

http://www.eortc.be/services/download/ROGQA/

IMRT Benchmark

Please note that the file name (version nr.) might change

2. Follow the instruction and plan the IMRT benchmark case

Description is available:

http://atc.wustl.edu/credentialing/ATC_reports/IMRT_Benchmark_03Nov09.pdf

3. Uploading the IMRT benchmark to the ITC/ATC

After the export, all data should be sent by Secure File Transfer Protocol (SFTP) to the ITC SFTP server. The procedure is described at the **Upload procedure to the ATC/ITC** chapter.

Once proper submission is received, submitted IMRT benchmark will be reviewed by the trial QART team (including the RPC as US representative for QART).

Thank you very much for your cooperation.

In a case you notice any problems, please do not hesitate to contact us,

Yours sincerely,

With best regards

Akos Gulyban
QART manager
Tel.: +32 2 774 10 52
Fax: +32 2 772 35 45
akos.gulyban@eortc.be

Anouk Allgeier
Project Manager
Tel.: +32 2 774 10 47
Fax: +32 2 772 67 01
anouk.allgeier@eortc.be

Paul Fenton
EvdS fellow
Tel.: +32 2 774 10 07
Fax: +32 2 772 35 45
paul.fenton@eortc.be

Denis Lacombe
Clinical Research Physician
Tel.: +32 2 774 16 57
Fax: +32 2 772 35 45
denis.lacombe@eortc.be

QART checklist for 26081-22086 trial

EORTC QART level I. Facility Questionnaire and External Reference Dosimetry Audit

Before authorization (contact: facilityquest@eortc.be)

1. Facility Questionnaire submission / update	
2. Facility Questionnaire accepted	
3. External Reference Dosimetry Audit submission	
4. External Reference Dosimetry Audit accepted	

EORTC QART level II. Dummy Run / (DR) contact: qart26081@eortc.be

QART level III. Limited Individual Case Review

	Dummy/Dry Run	Individual Case Review
1. DR accreditation (according to the table) a) Account: Same TPS + 3D-CRT – confirmation mail by site b) Account: New / 3D-CRT – confirmation by ITC c) Account: IMRT accreditation – confirmation by EORTC		
2. Contouring and planning according to the a) IMRT benchmark (IMRT DR) b) 26081-22086 protocol (ICR)		
3. DICOM-RT export from the Treatment Planning System Diagnostic images + treatment plan (images, structure, dose, plan)		
4. Upload the data to ITC using SFTP transfer		
5. Complete the DDSI form http://atc.wustl.edu/forms/DDSI/ddsi-eortc.html		
6. Notify the ITC about the upload (by email)		
7. Receipt of notification of the DR/ICR acceptance		

EORTC QART level V. IMRT accreditation contact: qart26081@eortc.be

1. Download the IMRT benchmark	
2. Perform the benchmark according to the description	
3. Submit all documentation to ITC	
4. Receipt of notification of the IMRT benchmark acceptance	