Unità di Radioterapia
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Università degli Studi di Brescia

U.O. Radioterapia
A.O. Spedali Civili di Brescia

Incontri Bresciani di Radioterapia Oncologica – Edizione 2013
Brescia Meetings in Radiation Oncology – 2013 Edition

DIFFICULT CLIMBING: TREATMENT OF GLIOMAS AND A TRIBUTE TO PROF. G.P.BITI

Brescia – October 3rd/4th, 2013

An overview of the draft of the AIRO Guidelines for CNS tumors

Dr. Laura Masini, University Hospital "Maggiore della Carità" Novara

Why do we need CNS tumors guidelines?

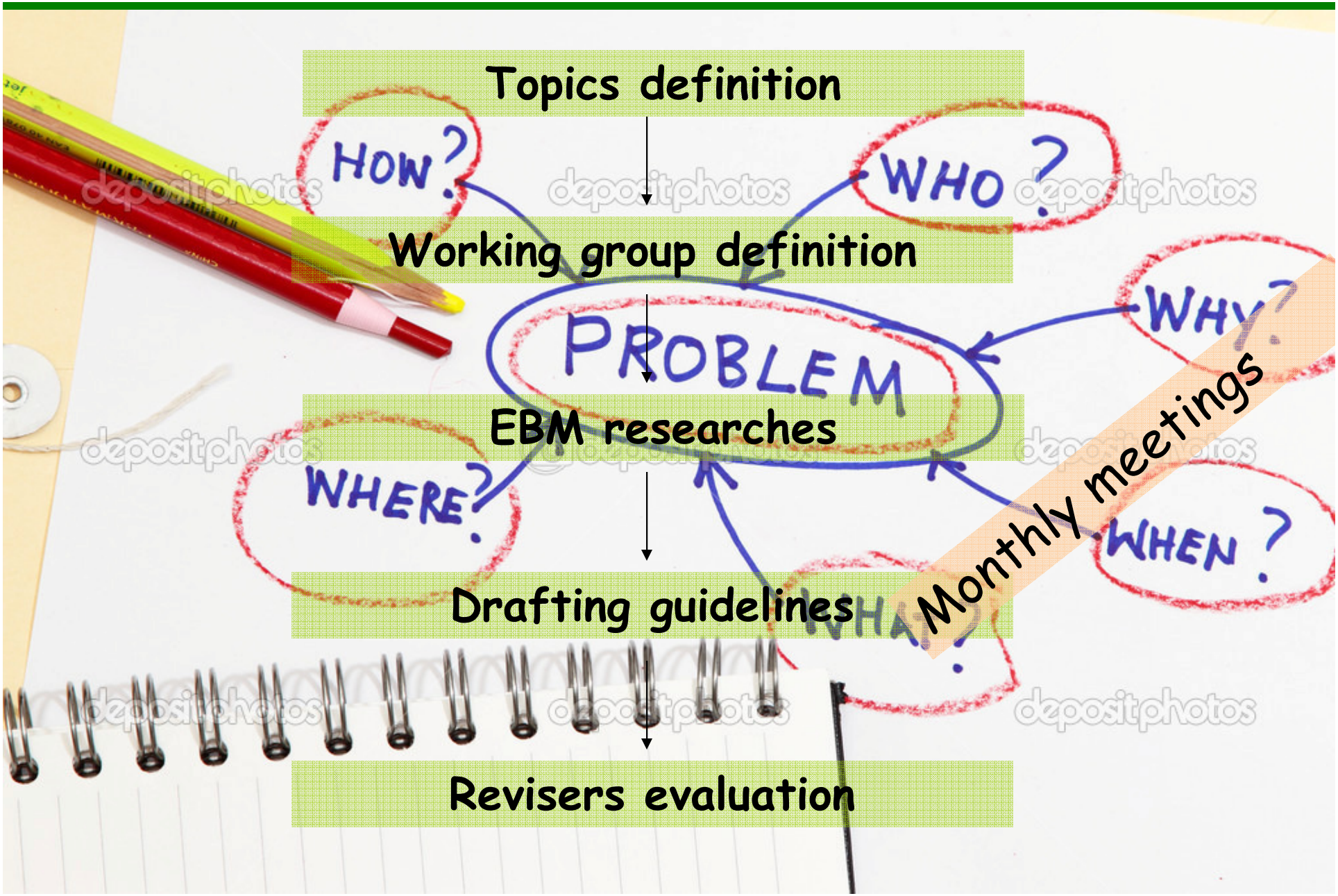
The standard definition of Clinical practice guidelines is that of Field and Lohr [1990]: "systematically developed statements to assist practitioners and patient decisions about appropriate health care for specific circumstances".

The CNS intergroup of AIRO decided to create guidelines to support decision-making processes in patient care.
The content of these guidelines is based on a systematic review of clinical evidence.

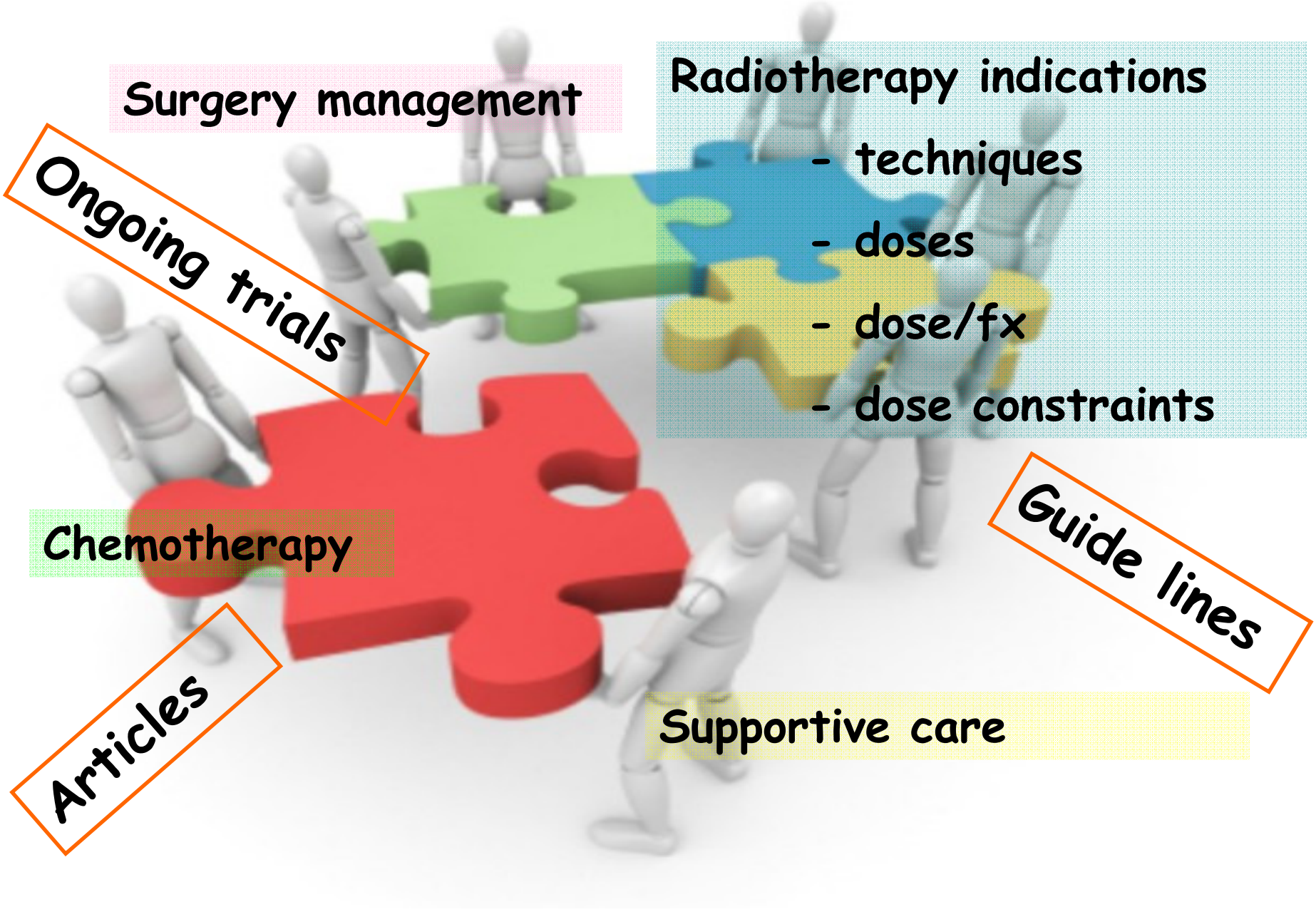
AIRO group

Macro-capitolo	Argomento	Estensore	Revisore
Tumori -extrassiali	Adenomi ipofisari	Giacobazzi (Modena)	Balducci (Roma Cattolica)
	Meningiomi Neurinomi	Masini (Novara)	Fusco (Rionero in Vulture)
Tumori rari dell'età adulta	Ependimomi, medulloblastomi	Navarria (Milano-Humanitas)	Ricardi (Torino)
	Cordomi e condrosarcomi	Amelio (Trento ATREP)	Santoni (Roma)
Localizzazioni secondarie al SNC	M1 cerebrali	Amelio (Trento ATREP)	Bertoni (Modena)
	M1 spinali	Ciammella (Reggio Emilia)	Antognoni (Varese)
	Diffusioni meningee, leucemiche e di tumori solidi	Buglione M (Brescia)	Fariselli (Mi-Besta)
Gliomi basso grado	Gliomi I-II	Scoccianti (Firenze)	Sotti (Padova)
Gliomi alto grado	Gliomi III	Minniti (Roma St.Andrea)	Magrini (Brescia)
	GBL	Buglione (Brescia)	Krengli (Novara)
Linfomi	Linfomi primitivi del SNC	Chiesa (Roma Cattolica)	Pirtoli (Siena)
Organi a rischio	Limiti di dose OAR; frazionamento convenzionale e non convenzionale/stereotassi; contornamento	Ciammella (Reggio-Emilia) Montesi (Perugia) Borghetti (Brescia)	Tombolini (Roma – Sapienza)

Which way have we worked?



The investigation focused on …



EBM research

NCBI Resources How To

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National Institutes of Health

PubMed | meningioma treatment | Search

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Results: 1 to 20 of 8497

Article types

Clinical Trial

Review

CLINICAL INVESTIGATION

A STUDY ON THE RADIATION TOLERANCE (

Clinical Investigation: Head and Neck Cancer

Fractionated Proton Radiotherapy for B

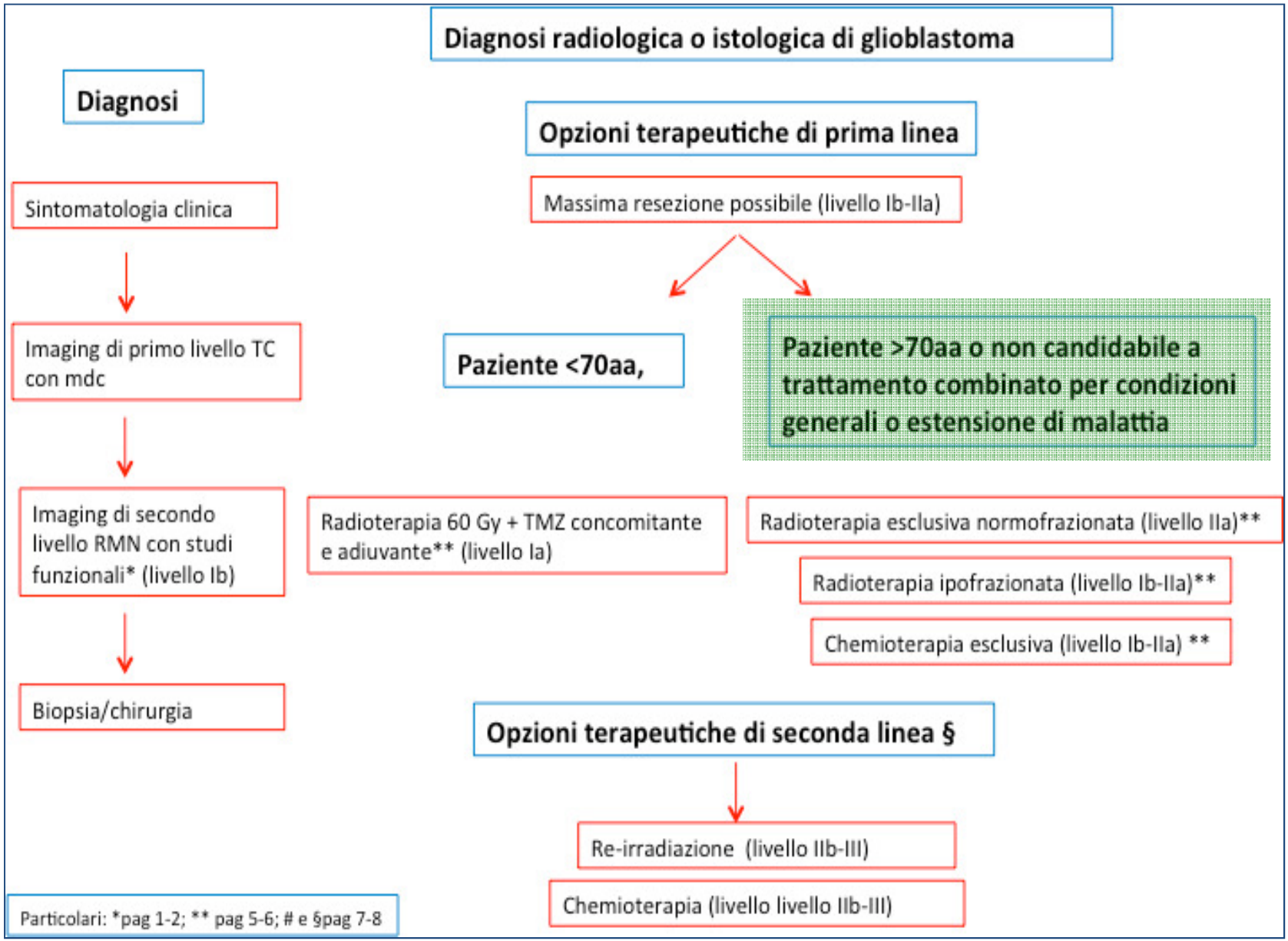
Clinical Investigation: Central Nervous System Tumor

Radiosurgery for Para-IAC Meningiomas: The Effect of Radiation Dose to the Cochlea on Hearing Outcome

CLINICAL INVESTIGATION — Central Nervous System

BENIGN MENINGIOMA: PARTIALLY RESECTED, BIOPSIED, AND RECURRENT INTRACRANIAL TUMORS TREATED WITH COMBINED PROTON AND PHOTON RADIOTHERAPY

Some examples … GBM



Associazione Italiana Radioterapia Oncologica
Gruppo di Lavoro Neoplasie Cerebrali

"Studio clinico randomizzato prospettico di fase II in pazienti affetti da glioblastoma classe prognostica RPA V e VI: confronto tra Radioterapia (RT) ipofrazionata 30 Gy (6 frazioni in due settimane) e Temozolomide (TMZ) esclusiva (200 mg/mq/die per 5 gg ogni 28) "

End-Points

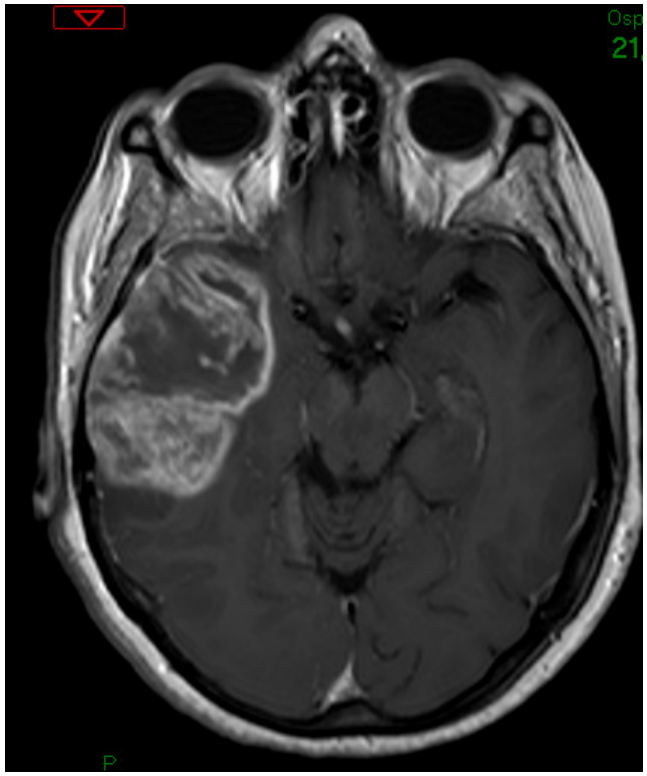
Primary: Progression disease

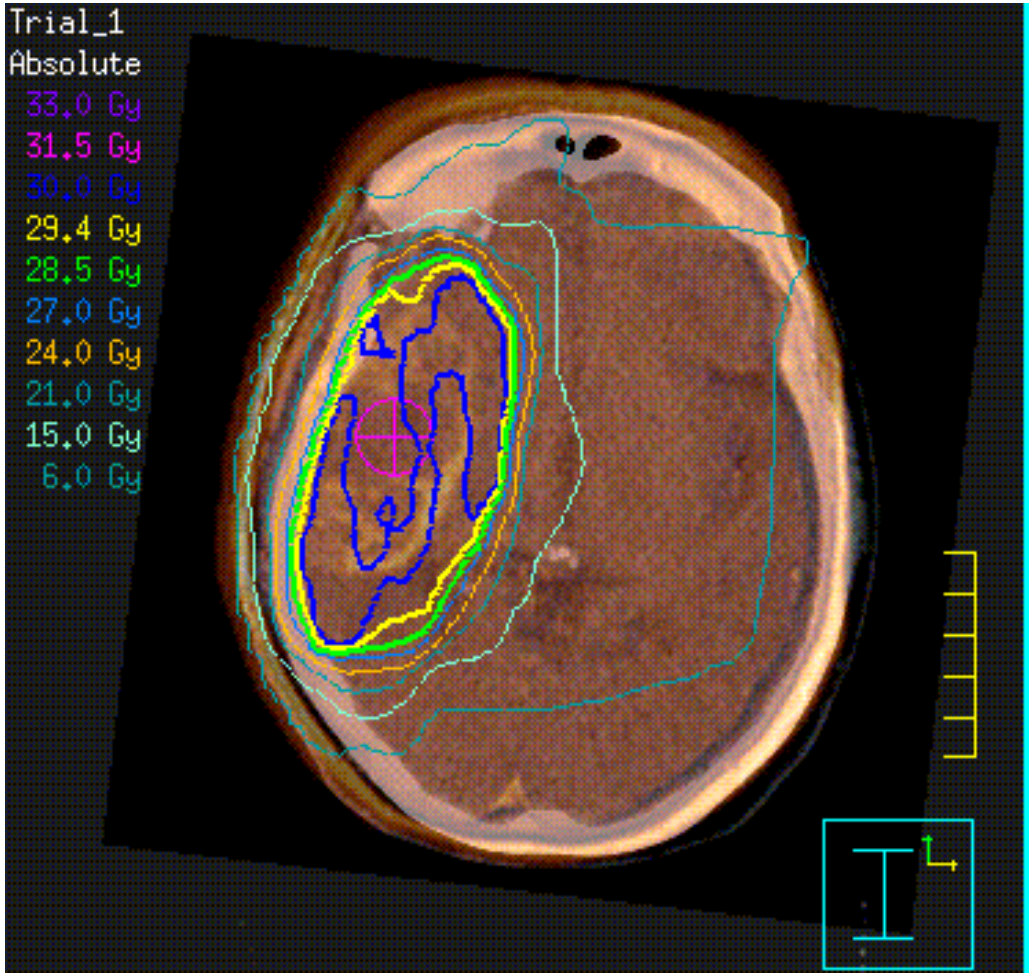
Secondary: Quality adjusted survival
Survival

G.M. 69 ys

July, 2012: worsening headache

MRI: cerebral mass. No surgery indication



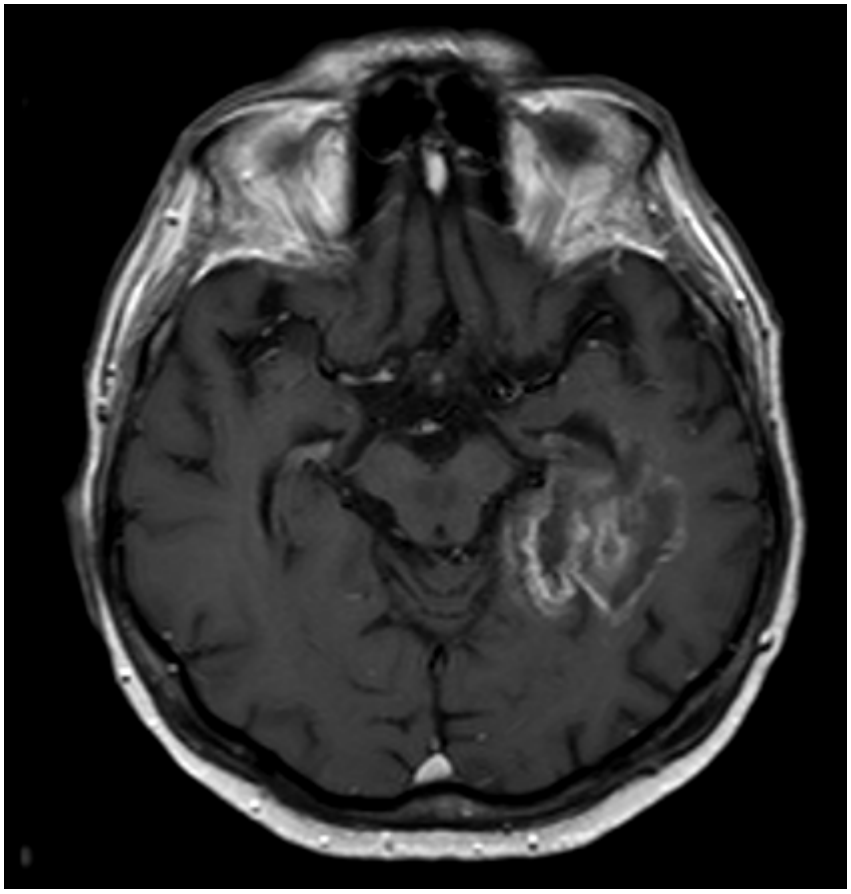


Treatment planning
with MRI fusion

S.Z. 70 ys

July, 2011: worsening headache + aphasia

MRI: cerebral mass. No surgery indication



TMZ 200 mg/mq/die
5dy/month

Combining Hypofractionation with Dose escalation in High Grade Gliomas (RPA classes III and IV): Simultaneous Integrated Boost

Phase II – Prospective trial

End-Points

Primary: Overall Survival

Secondary: Progression free, quality of life

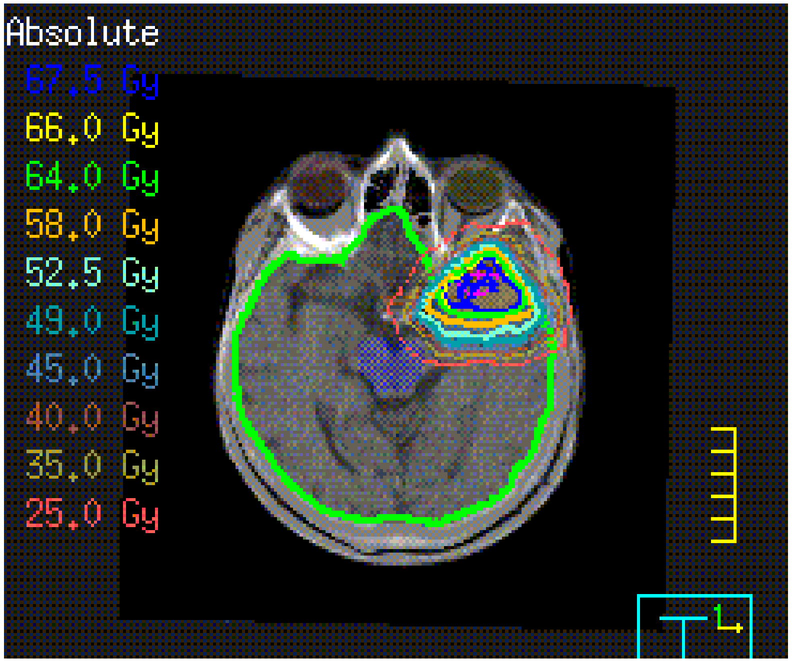
D.M. 60 ys

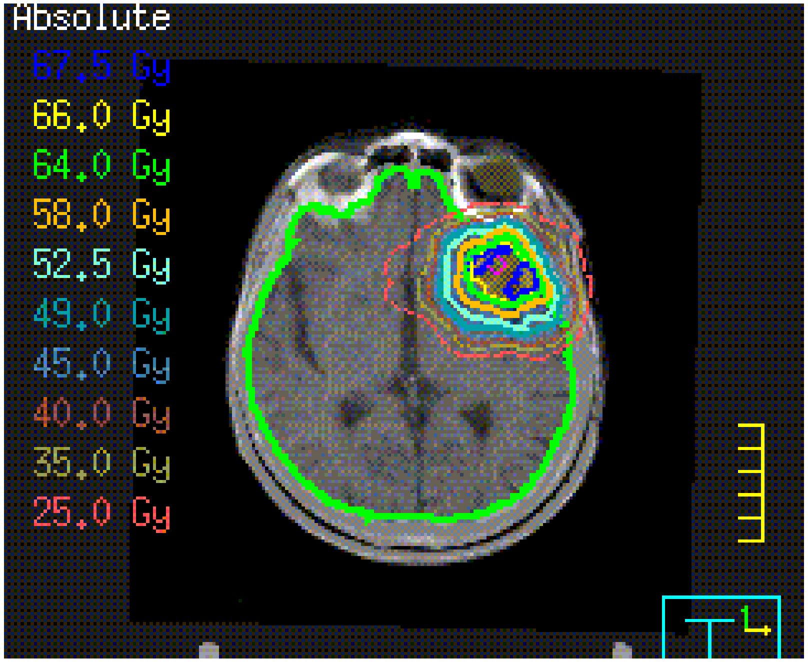
April, 2010: worsening headache

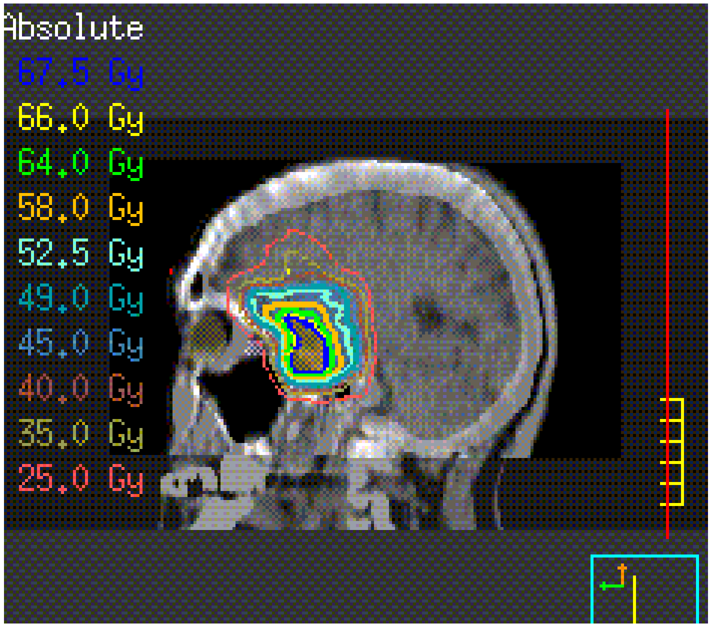
MRI: cerebral mass.

May, 2010: surgical excission

IMRT-SIB







Cerebral IMRT SIB X 6MV.

CTV1 67.5 Gy 4.5Gy/fx,

CTV2 52.5 3.5Gy/fx

Some examples … meningioma

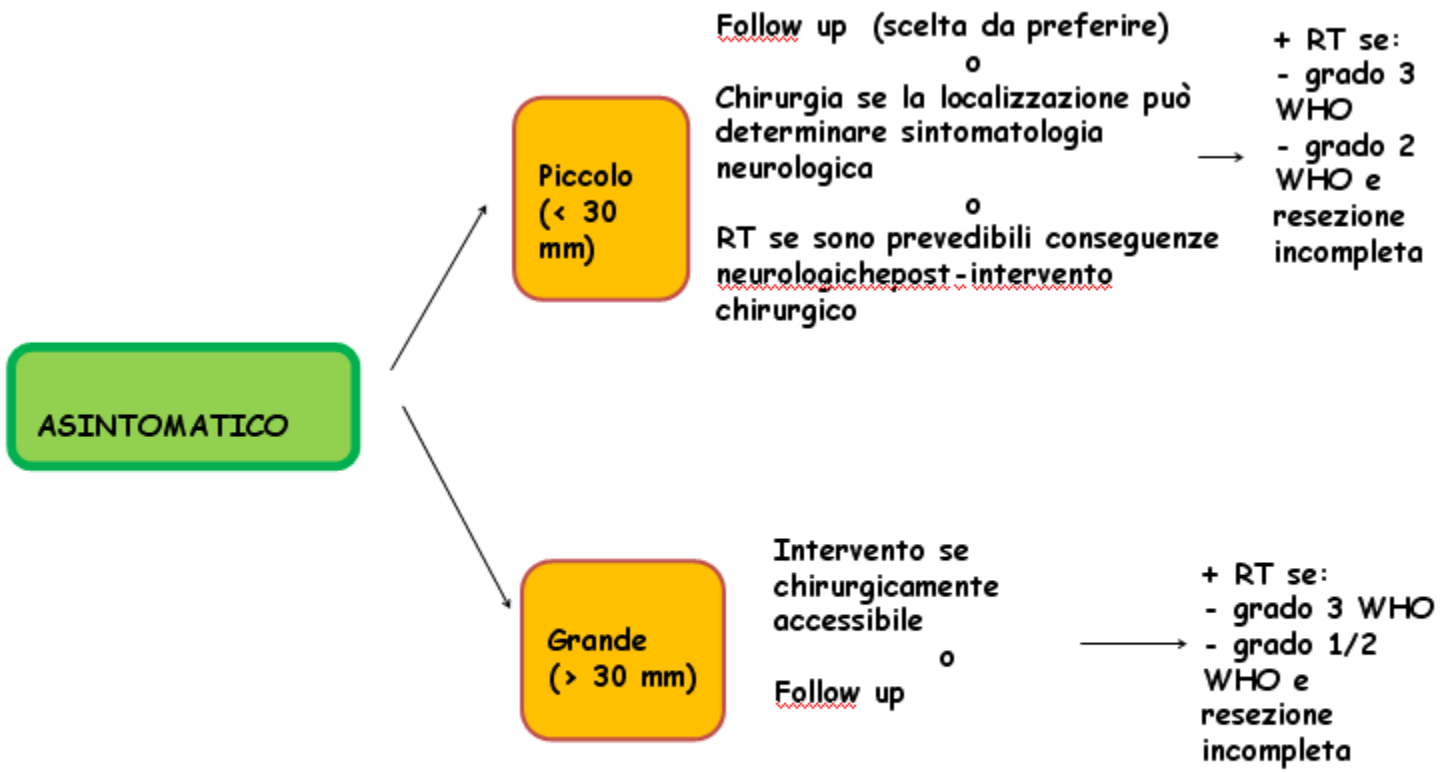
Diagnosi radiologica:
- massa di origine durale ± peduncolo durale;
- presa di contrasto omogenea;
- netta demarcazione dal liquor

→

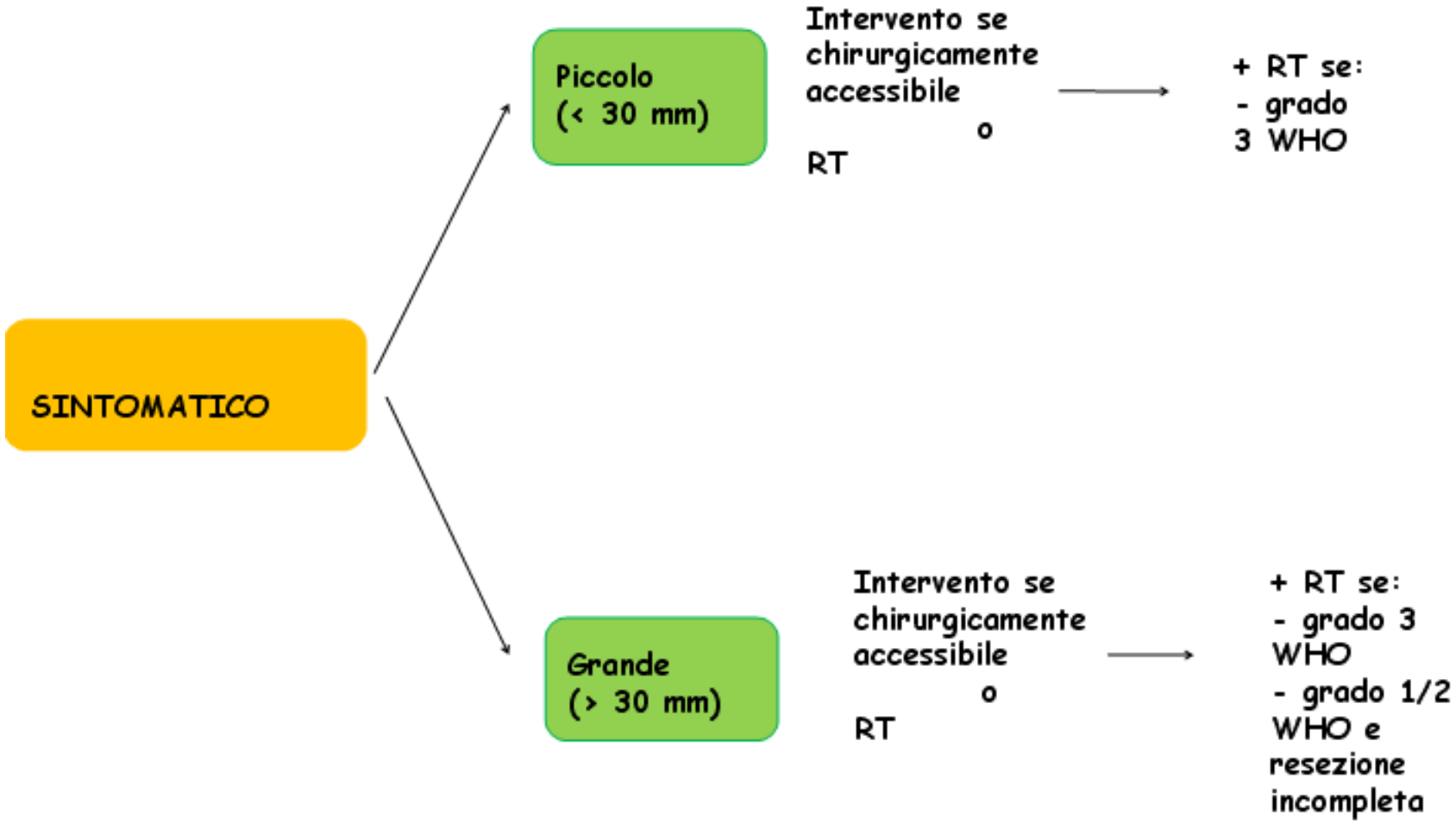
Diagnosi certa con criteri radiologici
o
Possibile diagnosi di meningioma:
- considerare biopsia/resezione;
- considerare onctreotide-scan se esistono dei dubbi diagnostici

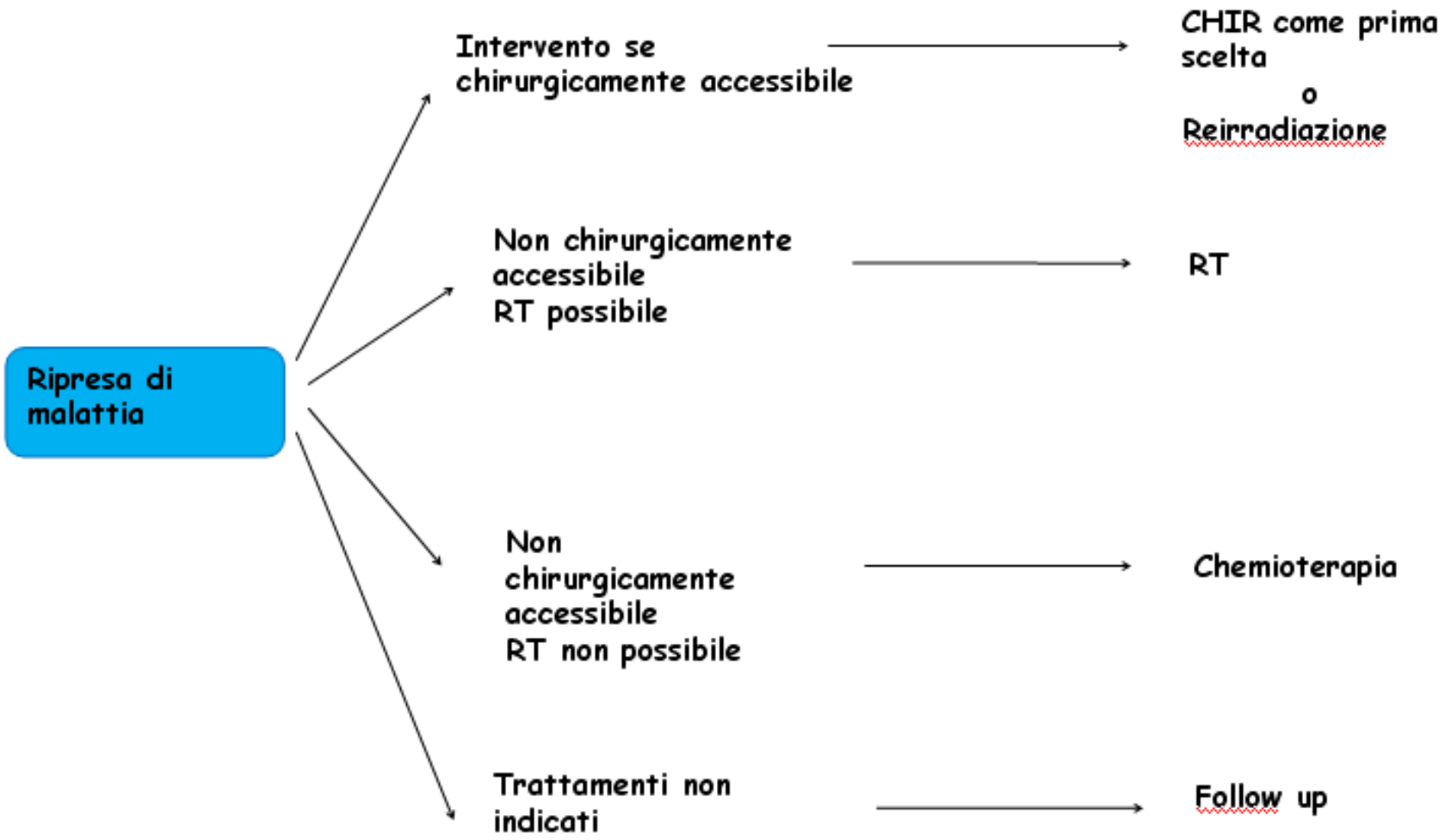
→ ASINTOMATICO

→ SINTOMATICO



Tutte le raccomandazioni sono di categoria 2A


SINTOMATICO
Piccolo
(< 30 mm)
Intervento se
chirurgicamente
accessibile
o
RT
+ RT se:
- grado
3 WHO
Grande
(> 30 mm)
Intervento se
chirurgicamente
accessibile
o
RT
+ RT se:
- grado 3
WHO
- grado 1/2
WHO e
resezione
incompleta


Ripresa di malattia
Intervento se chirurgicamente accessibile
CHIR come prima scelta
o
Reirradiazione
Non chirurgicamente accessibile
RT possibile
RT
Non chirurgicamente accessibile
RT non possibile
Chemioterapia
Trattamenti non indicati
Follow up

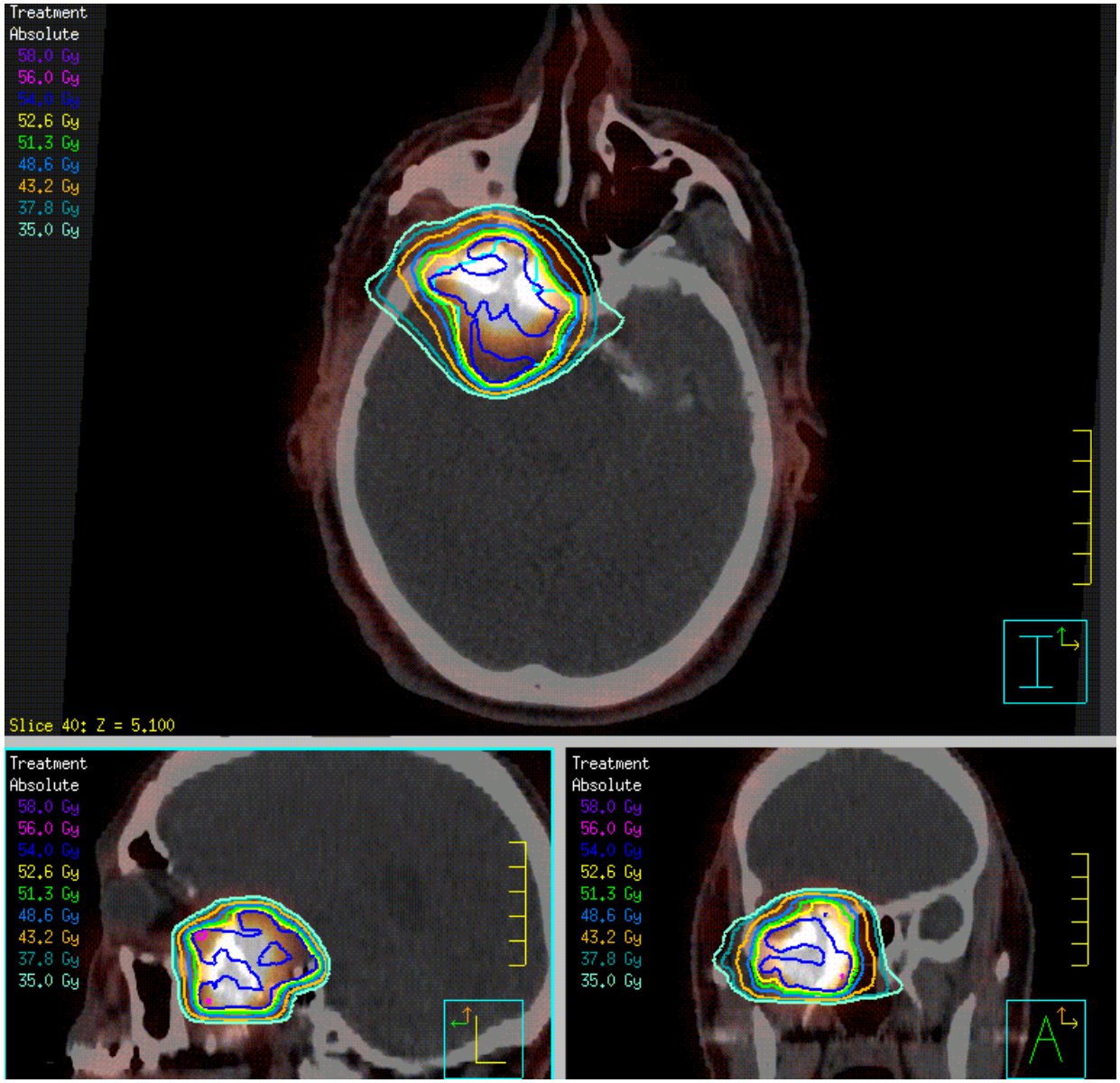
Technical aspects: target volume definition, doses, emerging techniques

Volumi Target:
-GTV residuo
-CTV = GTV o cavità chirurgica
-CTV meningiomi atipici = GTV +1 – 2 cm di margine
-CTV meningioma anaplastico = GTV + 2 – 3 cm di margine
-PTV 1 – 5 mm in relazione alla tecnica RT usata

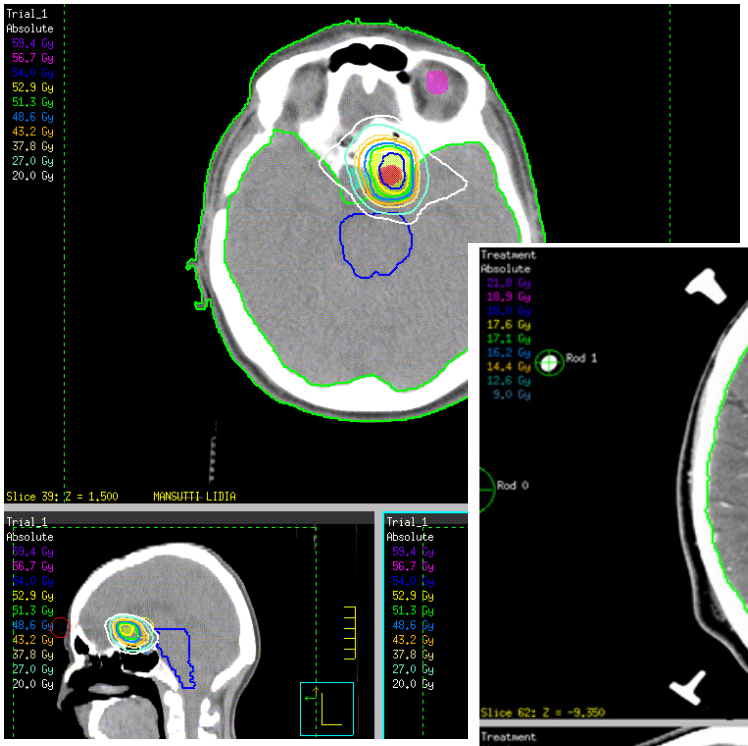
Tecnica Radioterapica (in relazione alla disponibilità e alla sede della neoplasia)
-Radioterapia 3D-conformazionale
-Radioterapia stereotassica frazionata (FSRT)- Radiochirurgia
-Radioterapia a intensità modulata (IMRT)
-Terapia con particelle : protoni e ioni carbonio

Dose
-≥ 60 Gy atipici
-≥ 66 Gy maligni
-54 Gy fraz 2 Gy, meningiomi benigni, 12-14 Gy radiochirurgia

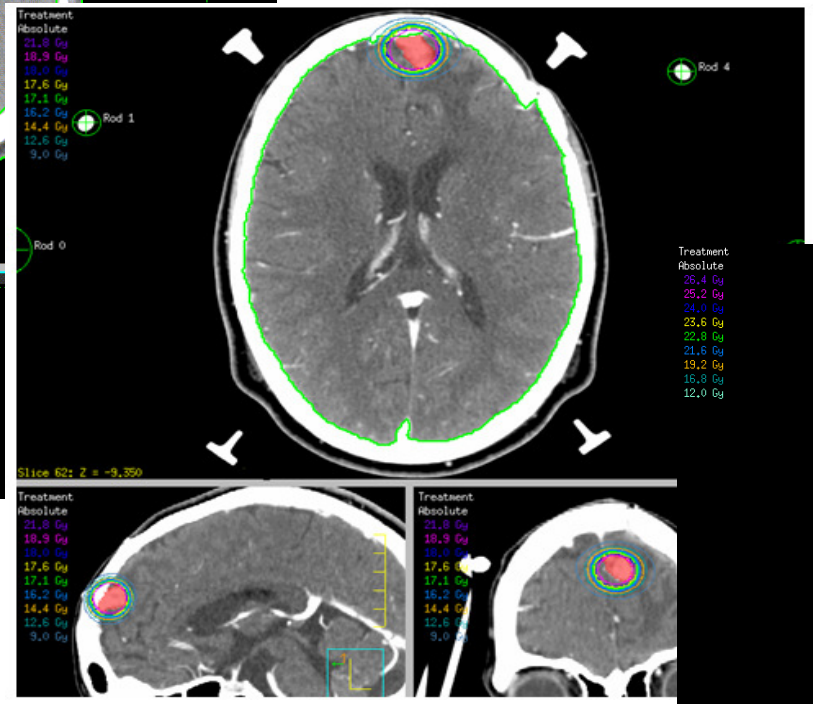
Technical aspect: FSRT



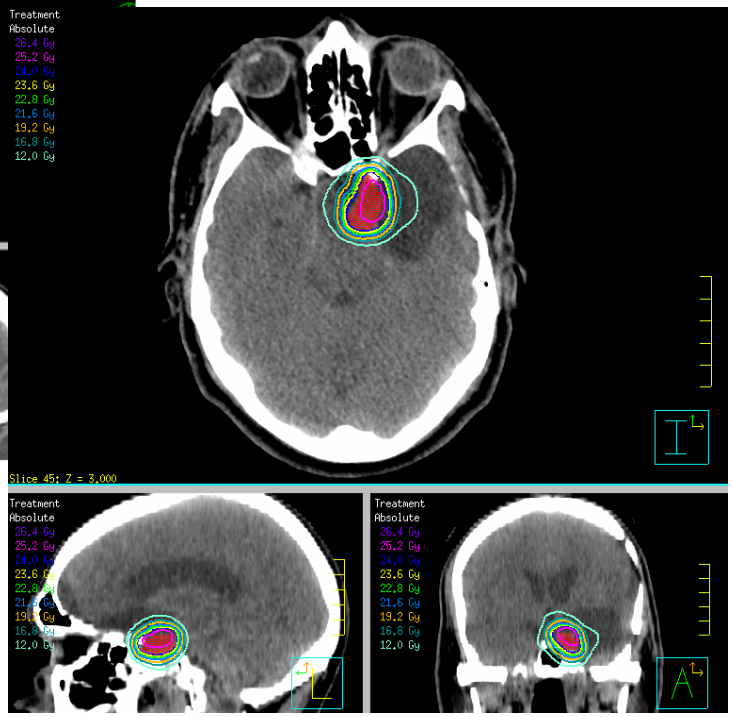
Technical aspect: IMRT, radiosurgery and FSRT



54 Gy (2 Gy/fr)



24 Gy/1 fx



24 Gy/3 fx

Conclusion

These guidelines have to be evaluated by the AIRO CD and then they could be used by every radiation oncologist….