Mise au point sur les essai thérapeutiques SFOP/SFCE versus SIOP (délai entre protocoles : français devenus SIOP)

Médulloblastomes

HGG

LGG

Epéndymomes

TGM

MB SR > 5 ans MSFOP 98

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JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Online Quality Control, Hyperfractionated Radiotherapy Alone and Reduced Boost Volume for Standard Risk Medulloblastoma: Long-Term Results of MSFOP 98

Christian Carrie, Jacques Grill, Dominique Figarella-Branger, Valerie Bernier, Laetitia Padovani, Jean Louis Habrand, Mohamed Benhassel, Martine Mege, Marc Mahé, Philippe Quetin, Jean Philippe Maire, Marie Helene Baron, Pierre Clavere, Sophie Chapet, Philippe Maingon, Claire Alapetite, Line Claude, Anne Laprie, and Sophie Dussart

From the Centre Léon Bérard, Department of Radiotherapy; Centre Léon Bérard, Department of Unit of Biostatics and Evaluation of Therapeutics; Lyon University, Lyon; Institut Gustave Roussy, Department of Pediatric Oncology; Institut Gustave Roussy, Department of Radiotherapy, Villejuif; Centre Hospitalier Universitaire (CHU) de la Timone, Department of Pathology;

PATIENTS AND METHODS

Between December 1998 and October 2001, 55 patients with standard-risk medulloblastoma (defined as patients without meningeal enhancement of the brain or the spine, no tumor cells within the craniospinal fluid, and with a maximum residual disease of $< 1.5\ cm^2$ in the posterior fossa after surgery) were enrolled in the MSFOP 98 protocol. Mandatory investigations included:

55 pts 2^{11} a

Rôle du bifrac, qui sera testé dans le PNET 4

Résultats actualisés avec MSFOP 2007

	MSFOP98 N=48	MSFOP2007 N=66	ALL N=114
ISOLATED EXTRA CNS	1	2	3
INTRA AND EXTRA CNS	2	1	3
ISOLATED TUMOR BED	1	1	2
FCP OUTSIDE TB	0	1	1
OTHER :spi.axis, diffuse, cns fluid , sustent	10	14	24

Protocols	OS5 (%)	PFS5 (%)
HFRT MSFOP 98 + 2007	84	74
HFRT PNET 4	87	77
Normof MSFOP 93	73	65

MB < 5 ans BB SFOP

Treatment of medulloblastoma with postoperative chemotherapy alone: an SFOP prospective trial in young children

Jacques Grill, Christian Sainte-Rose, Anne Jouvet, Jean-Claude Gentet, Odile Lejars, Didier Frappaz, François Doz, Xavier Rialland, Fabienne Pichon, Anne-Isabelle Bertozzi, Pascal Chastagner, Dominique Couanet, Jean-Louis Habrand, Marie-Anne Raquin, Marie-Cécile Le Deley, Chantal Kalifa, on behalf of the French Society of Paediatric Oncology (SFOP)

Summary

Background Morbidity and mortality are high in young children with medulloblastoma who receive craniospinal radiotherapy. We aimed to assess whether adjuvant treatment with protracted chemotherapy alone could replace radiotherapy.

Methods We enrolled 79 children aged younger than 5 years who had had surgical resection of medulloblastoma onto a multicentre trial. Patients were treated with combination chemotherapy, which did not include methotrexate, for more than 16 months irrespective of the extent of disease. Early postoperative imaging defined three groups: R0M0 (no residual disease, no metastasis), R1M0 (radiological residual disease alone), and RXM+ (presence of metastases). Patients who did not relapse did not receive radiotherapy. Patients who relapsed or had disease progression received salvage treatment, which consisted of high-dose chemotherapy and stem-cell transplantation followed by local or craniospinal radiotherapy. For children classified as R0M0, the primary endpoint was 5-year overall survival and the secondary endpoint was 5-year progression-free survival. For children classified as R1M0 or RXM+, the primary endpoint was best radiological response and the secondary endpoints were 5-year overall survival and 5-year progression-free survival. Analyses were done by intention to treat.

Findings Two of 15 patients classified as RXM+ and four of 17 patients classified as R1M0 had a complete radiological response. 5-year progression-free survival was 29% (95% CI 18–44) in the R0M0 group, 6% (1–27) in the R1M0 group, and 13% (4–38) in the RXM+ group. 5-year overall survival was 73% (59–84) in the R0M0 group, 41% (22–64) in the R1M0 group, and 13% (4–38) in the RXM+ group. In the R0M0 group, 5-year progression-free survival was 41% (26–58) for the 34 patients who underwent gross total resection compared with 0% for the 13 patients who had subtotal resection (relative risk 2·7 [1·3–5·6], p=0·0065).

Interpretation Conventional chemotherapy alone can be used to cure children with non-metastatic medulloblastoma who have gross total resection confirmed by early radiological assessment, but is not sufficient for treatment of those with metastatic or incompletely resected medulloblastoma. Salvage treatment followed by posterior-fossa radiotherapy can effectively treat local relapses or progression.

Lancet Oncol 2005; 6: 573–80

See Reflection and Reaction page 541

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Results

From January, 1990, to December, 2002, 93 patients were treated according to the BBSFOP (Baby Brain French Society of Paediatric Oncology) protocol with an initial diagnosis of medulloblastoma in 18 centres in France, one centre in Belgium, and one centre in the UK (figure 1). Recruitment was stopped early for patients classified as RXM+ (in 1995) and R1M0 (in 1996) because of insufficient response.

75 pts 13^{11} a
OS_5 73% sans RT si R0M0

MB SR > 3 ans SFCE

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JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Standard-Risk Medulloblastoma Treated by Adjuvant Chemotherapy Followed by Reduced-Dose Craniospinal Radiation Therapy: A French Society of Pediatric Oncology Study

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Authors' disclosures of potential conflicts of interest are found at the end of this article.

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A B S T R A C T

Objective
The primary objective of this study was to decrease the late effects of prophylactic radiation without reducing survival in standard-risk childhood medulloblastoma.

Patients and Methods
Inclusion criteria were as follows: children between the ages of 3 and 18 years with total or subtotal tumor resection, no metastasis, and negative postoperative lumbar puncture CSF cytology. Two courses of eight drugs in 1 day followed by two courses of etoposide plus carboplatin (500 and 800 mg/m^2 per course, respectively) were administered after surgery. Radiation therapy had to begin 90 days after surgery. Delivered doses were 55 Gy to the posterior fossa and 25 Gy to the brain and spinal canal.

Results
Between November 1991 and June 1998, 136 patients (median age, 8 years; median follow-up, 6.5 years) were included. The overall survival rate and 5-year recurrence-free survival rate were 73.8% ± 7.6% and 64.8% ± 8.1%, respectively. Radiologic review showed that 4% of patients were wrongly included. Review of radiotherapy technical files demonstrated a correlation between the presence of a major protocol deviation and treatment failure. The 5-year recurrence-free survival rate of patients included in this study with all optimal quality controls of histology, radiology, and radiotherapy was 71.8% ± 10.5%. In terms of sequelae, 31% of patients required growth hormone replacement therapy and 25% required special schooling.

Conclusion
Reduced-dose craniospinal radiation therapy can be proposed in standard-risk medulloblastoma provided staging and radiation therapy are performed under optimal conditions.

RESULTS

One hundred thirty-six patients (80 boys, 56 girls) were included between November 1991 and June 1998. The median age was 8 years (range, 3 to 18 years). Data were updated in June 2003, with a median follow-up of 6.5 years (range, 2 months to 10.5 years). For the 96 patients last known to be alive, the median time elapsed between last follow-up and June 30, 2003 is 17 months.

136 pts 7^7 a
Désescalade RT → 25 Gy
EFS_5 66%, OS_5 75%

MB PNET 4 SR SIOP

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JOURNAL OF CLINICAL ONCOLOGY

ORIGINAL REPORT

Hyperfractionated Versus Conventional Radiotherapy Followed by Chemotherapy in Standard-Risk Medulloblastoma: Results From the Randomized Multicenter HIT-SIOP PNET 4 Trial

Birgitta Lannering, Stefan Rutkowski, Francois Doz, Barry Pizer, Göran Gustafsson, Aurora Navajas, Maura Massimino, Roel Reddingius, Martin Benesch, Christian Carrie, Roger Taylor, Lorenza Gandola, Thomas Björk-Eriksson, Jordi Giralt, Foppe Oldenburger, Torsten Pietsch, Dominique Figarella-Branger, Keith Robson, Marco Forni, Steven C. Clifford, Monica Warmuth-Metz, Katja von Hoff, Andreas Faldum, Véronique Mosseri, and Rolf Kortmann

RESULTS

Between January 1, 2001, and December 31, 2006, 340 patients were randomly assigned, starting in Germany where the study originated and gradually accruing across Europe. One ependymoma and one atypical teratoid rhabdoid tumor were excluded because of ineligible histology at central review leaving 338 randomly assigned patients.

340 pts 6 a
Pas de différence HFRT vs RT
EFS_5 77% OS_5 87%
EFS_5 : R+ 82%
R- 64%
HFRT associated with marginally higher VIQ in < 8 y

MB HR > 3 ans SFOP

EUROPEAN JOURNAL OF CANCER 42 (2006) 3004–3014

available at www.sciencedirect.com

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journal homepage: www.ejconline.com

Treatment of high risk medulloblastomas in children above the age of 3 years: A SFOP study☆

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3. Results

3.1. *Study population*

Between January 1993 and June 1999, 115 patients with an institutional diagnosis of high risk medulloblastoma were eligible for inclusion. Age at diagnosis of the 115 included

115 pts 6^5 a
8 en 1/CBDCA-VP - 36 Gy
EFS5 50%, OS5 60%.
R+ only EFS 69%
M1 59%
M2/M3 43%

MB PNET 3 HR SIOP

ELSEVIER

European Journal of Cancer 41 (2005) 727–734

European Journal of Cancer

www.ejconline.com

Outcome for patients with metastatic (M2–3) medulloblastoma treated with SIOP/UKCCSG PNET-3 chemotherapy

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3. Results

3.1. Patient population

Between March 1992 and January 2000, a total of 68 patients with M2–3 MB were registered with the UKCCSG and treated with CT and RT according to the PNET-3 protocol. The largest number of patients, 49 (72%), was entered from UKCCSG centres. Patients were also entered from the following countries: Denmark: 1 (2%), The Netherlands: 8 (12%), Poland: 3 (4), Spain: 7 (10%).

68 pts 7^9 a
EFS_5 35% OS 44%
Rôle délai RT

MB < 5 a IGR

Pediatr Blood Cancer 2014;61:907–912

High-Dose Busulfan–Thiotepa With Autologous Stem Cell Transplantation Followed by Posterior Fossa Irradiation in Young Children With Classical or Incompletely Resected Medulloblastoma

Guillaume Bergthold, MD,[1,2] Maria El Kababri, MD,[3] Pascale Varlet, MD, PhD,[4] Frederic Dhermain, MD, PhD,[5] Christian Sainte-Rose, MD, PhD,[6] Marie-Anne Raquin, MD,[1] Virginie Kieffer, MS,[1,7] Gisele Goma, MS,[8] Jacques Grill, MD, PhD,[1] Dominique Valteau-Couanet, MD, PhD,[1] and Christelle Dufour, MD[1]*

19 pts
Bu-Tpa + RT focale
EFS3 68% OS3 85%

MB HR / rechutes / réfractaires

High-dose Chemotherapy With Autologous Stem Cell Rescue Followed by Posterior Fossa Irradiation for Local Medulloblastoma Recurrence or Progression After Conventional Chemotherapy

Vita Ridola, MD[1]
Jacques Grill, MD, PhD[1]
Francois Doz, MD, PhD[2]
Jean-Claude Gentet, MD[3]
Didier Frappaz, MD[4]
Marie-Anne Raquin, MD[1]
Jean-Louis Habrand, MD, PhD[5]
Christian Sainte-Rose, MD[6]
Dominique Valteau-Couanet, MD, PhD[1]
Chantal Kalifa, MD[1]

BACKGROUND. The objective of the current study was to determine the outcome of children with local recurrence or progression of medulloblastoma in patients who received high-dose chemotherapy (HDC) and posterior fossa (PF) irradiation.
METHODS. HDC consisted in busulfan at a dose of 600 mg/m^2 and thiotepa at a dose of 900 mg/m^2 followed by autologous stem cells transplantation (ASCT). PF radiotherapy was delivered at doses from 50 grays (Gy) to 55 Gy on Day +70 after ASCT. Twenty-seven patients developed local recurrence of an initially completely resected medulloblastoma. Twelve patients had local residual disease after surgery and were enrolled into the salvage protocol at the time of local disease progression under conventional chemotherapy.

39 pts

OS5 69%

local recurrence OS5 77%

Pediatr Blood Cancer 2014;61:1398–1402

Tandem High-Dose Chemotherapy and Autologous Stem Cell Rescue in Children With Newly Diagnosed High-Risk Medulloblastoma or Supratentorial Primitive Neuro-Ectodermic Tumors

Christelle Dufour, MD,[1]* Virginie Kieffer,[1,2] Pascale Varlet, MD, PhD,[3] Marie Anne Raquin, MD,[1] Frederic Dhermain, MD, PhD,[4] Stephanie Puget, MD, PhD,[5] Dominique Valteau-Couanet, MD, PhD,[1] and Jacques Grill, MD, PhD[1]

Background. To assess the feasibility and effectiveness of high-dose chemotherapy (HDC) with stem cell support followed by conventional craniospinal radiotherapy (RT) as treatment for children older than 5 years of age with newly diagnosed high-risk medulloblastoma (MB) or supratentorial PNET (sPNET). ***Procedure.*** Between May 2001 and April 2010, 24 children older than 5 years of age (MB = 21; sPNET = 3), fulfilling inclusion criteria at diagnosis, were treated at Gustave Roussy. After conventional chemotherapy, they received two courses of high-dose thiotepa (600 mg/m^2) followed by craniospinal RT. ***Results.*** The median follow-up was 4.4 years (range, 0.8–11.3 years). For children with metastatic MB, the 5-year event-free survival (EFS) and overall survival (OS) were 72% and 83%, respectively. The toxicity was manageable. No toxic death occurred. At the most recent evaluation, among the 24 children who had at least one Full Scale Intellectual Quotient (FSIQ) examination at a median follow-up of 3.79 years after diagnosis, the mean estimated FSIQ was 82 (range, 56–114). ***Conclusions.*** In children with metastatic MB, tandem HDCT with ASCT followed by conventional craniospinal RT proved its feasibility without jeopardizing survival. Pediatr Blood Cancer 2014;61:1398–1402.

24 pts
2 Tpa RT CS
EFS5 72% OS5 83%,

HGG BB SFOP

EUROPEAN JOURNAL OF CANCER 42 (2006) 2939–2945

available at www.sciencedirect.com

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journal homepage: www.ejconline.com

Review

High-grade glioma in children under 5 years of age: A chemotherapy only approach with the BBSFOP protocol

C. Dufour[a,*], J. Grill[a], A. Lellouch-Tubiana[b], S. Puget[c], P. Chastagner[d], D. Frappaz[e], F. Doz[f], F. Pichon[g], D. Plantaz[h], J.C. Gentet[i], M.A. Raquin[a], C. Kalifa[a]

3. Results

Patient characteristics are summarised in Table 1.

3.1. *Study population*

Between October 1990 and June 2002, 21 children (10 boys, 11 girls) were treated for a high-grade glioma with the BBSFOP protocol.

21 pts 11[3] a
EFS5 32%
27% sans RT

HGG SFOP

Pediatr Blood Cancer 2007;49:803–807

Outcome of Children Treated With Preradiation Chemotherapy for a High-grade Glioma: Results of a French Society of Pediatric Oncology (SFOP) Pilot Study

P. Chastagner, MD, PhD,[1]* C. Kalifa, MD,[2] F. Doz, MD, PhD,[3] E. Bouffet, MD, PhD,[5] J.C. Gentet, MD,[6] M.M. Ruchoux, MD, PhD,[7] S. Bracard, MD, PhD,[8] E. Desandes, MD,[9] and D. Frappaz, MD, PhD[4]

Patient Population

The BCV pilot study was opened to participating SFOP institutions in March 1990 and was closed in May 1996. A total of 73 patients were enrolled from 15 French institutions. Patients' characteristics are presented in Table I.

73 pts, 6^3a
RR 20%
EFS_5 16%

LGG SFOP

PLOS ONE

RESEARCH ARTICLE

Mortality in Children with Optic Pathway Glioma Treated with Up-Front BB-SFOP Chemotherapy

Josué Rakotonjanahary[1,2☯*], Emilie De Carli[1☯], Matthieu Delion[3], Chantal Kalifa[4], Jacques Grill[4], François Doz[5], Pierre Leblond[6], Anne-Isabelle Bertozzi[7], Xavier Rialland[1], Brain Tumor Committee of SFCE[¶]

Patients and Methods

Patients

This is a historical cohort analysis of children less than 16 years of age who were treated in France for an OPG between June 1990 and December 2004. Using the French data base BB-SFOP (which lists all of the children treated in France with BB-SFOP chemotherapy,

Results

Patient characteristics

Between June 1990 and December 2004, a total of 445 children in France were treated with BB-SFOP chemotherapy. There were various indications (this chemotherapy can be applied in young children for brain tumors other than OPGs), and only 182 patients aged less than 16 years were identified as having been treated for OPG, using BB-SFOP chemotherapy as the first-line treatment. Two patients could not be included in the analysis because too much diagnosis data were missing from their records. Finally, our series included 180 children with a median follow-up of 13.6 years (range: 6.1–23.6). The main characteristics of these patients at the time of diagnosis are summarized in Table 1. Among the 180 patients, 79 had a follow-up $\geq$ 15 years, and 49 had a follow-up $\geq$ 18 years. Six patients were lost to follow-up (median follow-up: 11.8 years, range: 6.1–14.6).

LGG SIOP

European Journal of Cancer 81 (2017) 206–225

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.ejcancer.com

Clinical Trial

A European randomised controlled trial of the addition of etoposide to standard vincristine and carboplatin induction as part of an 18-month treatment programme for childhood (≤16 years) low grade glioma – A final report

Astrid K. Gnekow [a,1], David A. Walker [b,*,1], Daniela Kandels [b], Susan Picton [c], Giorgio Perilongo [d,1], Jacques Grill [e], Tore Stokland [f], Per Eric Sandstrom [g], Monika Warmuth-Metz [h], Torsten Pietsch [i], Felice Giangaspero [j,k], René Schmidt [l], Andreas Faldum [l], Denise Kilmartin [m], Angela De Paoli [m], Gian Luca De Salvo [m], on behalf of the Low Grade Glioma Consortium and the participating centers[2]

3. Results

3.1. Patient cohort

Between 1st April 2004 and 14th April 2012, 3417 previously untreated patients from 118 institutions in 11 countries were registered at the SIOP-LGG 2004 database following the SIOP-LGG treatment strategy. During the trial period, 1057 patients received chemotherapy. Of these, 497 non-NF1 patients were randomised to receive either VC- (n = 249) or VCE-induction (n = 248) (Fig. 2).

497 pts non NF1
PFS5 46% OS5 89%
VC = VCE
S. diencéphaliques pires

Ependymomes SFOP

ELSEVIER

Int. J. Radiation Oncology Biol. Phys., Vol. 74, No. 5, pp. 1536–1542, 2009

0360-3016/09/$–see front matter

doi:10.1016/j.ijrobp.2008.09.051

CLINICAL INVESTIGATION Brain

INTRACRANIAL EPENDYMOMAS IN CHILDREN: SOCIETY OF PEDIATRIC ONCOLOGY EXPERIENCE WITH POSTOPERATIVE HYPERFRACTIONATED LOCAL RADIOTHERAPY

Cécile Conter, M.D.,* Christian Carrie, M.D.,† Valérie Bernier, M.D.,‡ Anne Geoffray, M.D.,§ Anne Pagnier, M.D.,¶ Jean-Claude Gentet, M.D.,|| Arielle Lellouch-Tubiana, M.D.,# Sylvie Chabaud, M.D.,** and Didier Frappaz, M.D.*

Patient eligibility

Postoperative local HFRT was offered to all children with localized intracranial EP seen between November 1996 and December 2002 in centers affiliated with the French Society of Pediatric Oncology. The criteria for enrollment included age of 5–17 years at diagnosis, EP of any pathologic grade, and written informed consent. The criteria for exclusion were spinal primary EP, disseminated EP, previous chemotherapy or RT, relapse, associated disease, re-

24 pts
60-66 Gy
OS_5 75%, PFS_5 54%
Pas de benefice HFRT/RT conv

TGM SFOP

British Journal of Cancer (1999) **79**(7/8), 1199–1204

Article no. bjoc.1998.0192

Combined treatment modality for intracranial germinomas: results of a multicentre SFOP experience

E Bouffet[1,*], MC Baranzelli[2], C Patte[3], M Portas[4], C Edan[5], P Chastagner[6], F Mechinaud-Lacroix[7], C Kalifa[3] on behalf of the Société Française d'Oncologie Pédiatrique

RESULTS (Table 1)

Between January 1990 and December 1996, 99 newly diagnosed patients from 25 centres were enrolled in the SFOP protocol for intracranial GCTs. Fifty-nine were registered in the germinoma study. Other patients were registered in the non-germinomatous intracranial GCT study. Patients with a biopsy-proven germinoma associated with high βHCG secretion and/or αFP secretion were

99 pts
EFS3 96 %, OS3 98 %
Efficacité CT + RT focale

TGM SIOP

Neuro-Oncology 15(6):788–796, 2013.
doi:10.1093/neuonc/not019
Advance Access publication March 3, 2013

NEURO-ONCOLOGY

SIOP CNS GCT 96: final report of outcome of a prospective, multinational nonrandomized trial for children and adults with intracranial germinoma, comparing craniospinal irradiation alone with chemotherapy followed by focal primary site irradiation for patients with localized disease

Gabriele Calaminus, Rolf Kortmann, Jennifer Worch, James C. Nicholson, Claire Alapetite, Maria Luisa Garrè, Catherine Patte, Umberto Ricardi, Frank Saran, and Didier Frappaz

Materials and Methods

Patients

A total of 235 patients (176 male, 59 female) with histologically confirmed diagnosis of a germinoma and complete examination were enrolled in SIOP CNS GCT 96 from January 1, 1996 through December 31, 2005,

235 pts
TGM localisées
CSI ou CT + RT focale , PFS_5 97 vs 88% = identiques
OS_5 95% = identiques
Métastatiques PFS_5 98% OS 98%

TGM NG GTC SIOP

Neuro-Oncology
19(12), 1661–1672, 2017 | doi:10.1093/neuonc/nox122 | Advance Access date 5 July 2017

Outcome of patients with intracranial non-germinomatous germ cell tumors—lessons from the SIOP-CNS-GCT-96 trial

Gabriele Calaminus, Didier Frappaz, Rolf Dieter Kortmann, Barbara Krefeld, Frank Saran, Torsten Pietsch, Alexandre Vasiljevic, Maria Luisa Garre, Umberto Ricardi, Jillian R. Mann, Ulrich Göbel, Claire Alapetite, Matthew J. Murray, and James C. Nicholson

Patients

A total of 219 patients were enrolled into the SIOP-CNS-GCT-96 trial, of whom 35 were withdrawn because of incomplete staging and 35 because they did not receive treatment according to protocol (Fig. 1). A total of 149 patients (116 males, 33 females) with malignant NGGCT, confirmed by histology and/or tumor markers and complete workup, were enrolled by December 31, 2005 and followed to December 1, 2014. The median age at diagno-

219 pts
PFS_5 72% chemotherapy + focal RT
metastatic cases chemotherapy + CS RT
PFS_5 68%
LCS >1000 ng/mL = risk factor
R+ not resected at the end of treatment
is associated with an increased relapse risk

SFOP/SFCE

MB

SIOP

- MB SFOP SR > 3 ans
11/1991-06/1998 79 m, 136 pts
1,7 pts/m

0,5 a (10 pts)

- MB SFOP 98 SR > 3 ans
12/1998-10/2001 35 m, 55 pts
1,6 pts/m

- MB SIOP PNET 3 SR 3-16 ans
03/1992-01/2000 94 m,190 pts
2 pts/m

1 a (24 pts)

- MB SIOP PNET 4 SR 3-16 ans
01/2001-01/2007 72 m, 338 pts
4,7 pts/m

8^2 a (460 pts)

- MB SFOP PNET 5 SR 5-16 ans
03/2015

SFOP/SFCE MB SIOP

- MB SFOP HR > 3 ans

01/1993-10-2001 78 m, 115 pts
1,5 pts/m

SFOP/SFCE HGG « SIOP »

SFOP HGG > 5 ans

03/1990-06/1996 75 m,73 pts

1 pts/m

15^{2} a

(182 pts)

HERBY 3-5 ans

10/2011-02/2015 40 m, 121 pts

3 pts/m

18^{5} a

(34 pts)

BBSFOP HGG < 5 ans

10/1990-06/2002 136 m, 21 pts

? SIOP HGG infant

SFOP/SFCE

LGG

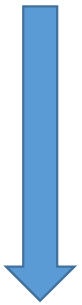
SIOP

BB SFOP

06/1990-12/2004 174 m, 445 pts
2,6 pts/m

SIOP LGG 2004

04/2004-04/2012 96 m, 497 pts
5,2 pts/m



7^7 a

(473 pts SIOP non inclus)

(237 pts SFCE non inclus)

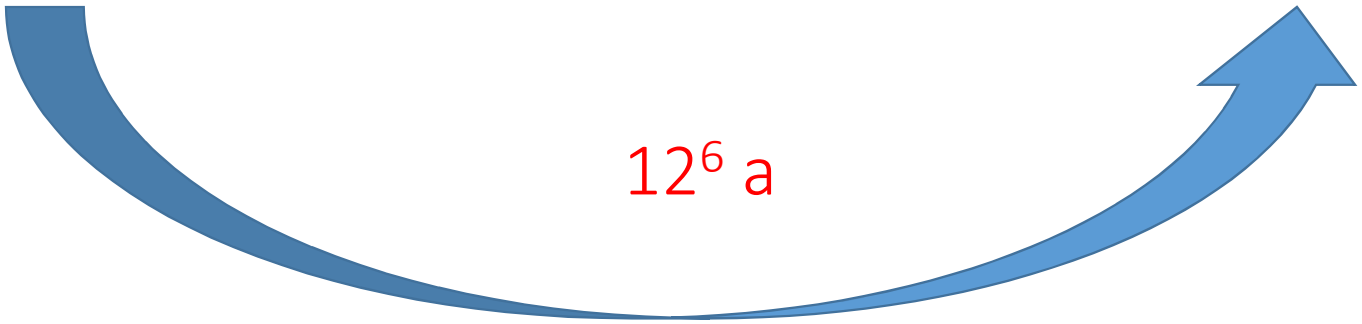
SIOP LGG II

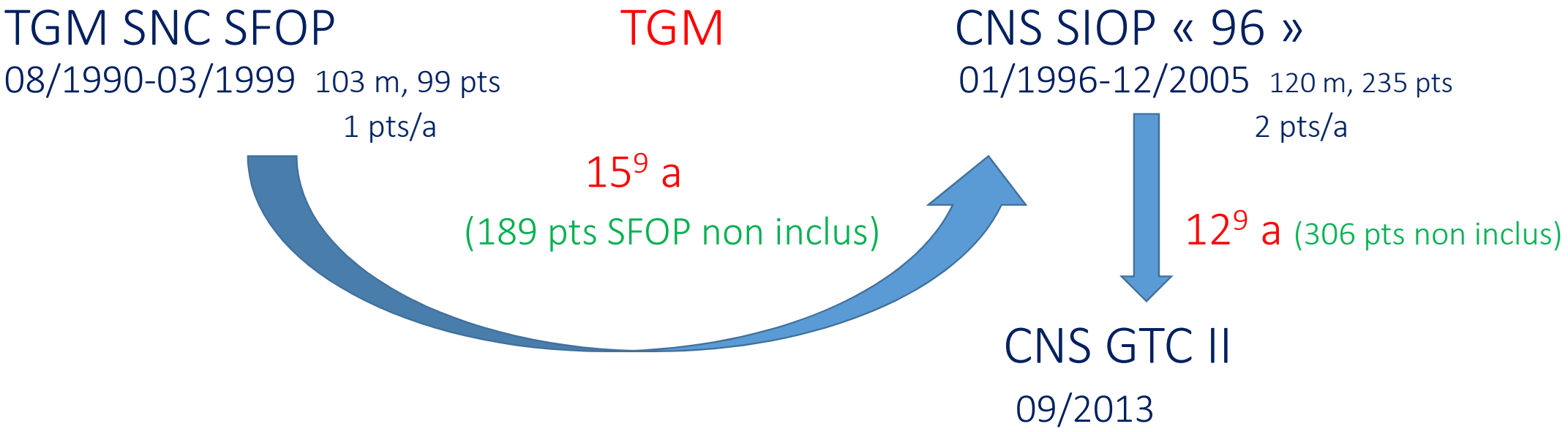
En ?

SFOP/SFCE Ependymomes SIOP

Ependymome SFOP Hyperfract > 5 ans SR
11/1996-12/2002 73 m, 24 pts (> 49 pts non inclus)

SIOP Ependymoma
06/2015




TGM SNC SFOP
08/1990-03/1999 103 m, 99 pts
1 pts/a
TGM
15^{9} a
(189 pts SFOP non inclus)
CNS SIOP « 96 »
01/1996-12/2005 120 m, 235 pts
2 pts/a
12^{9} a (306 pts non inclus)
CNS GTC II
09/2013

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