relapse he received Temozolomide monthly for 2 years. Twelve years after diagnosis of glioma left radical nephrectomy was done due to CCRC.

Patient 2: Male. Oligodendroglioma’s diagnosis at 53y. IDH1+ No codeletion 1p19q. He was treated with Surgery and Stupp protocol. Five years after diagnosis of glioma right partial nephrectomy was done due to CCRC.

Patient 3: Male. Oligodendroglioma’s diagnosis at 36y. IDH1+ No codeletion 1p19q. He was treated with Surgery and Stupp protocol. Five years after diagnosis of glioma right partial nephrectomy was done due to CCRC.

All three patients had mutated IDH1 and are alive at 19, 8, and 9 years from initial glioma diagnosis. We did not find in the literature and PUBMED any reports associating CCRC with Oligodendrogliomas. These results could suggest than CCRC may have an association with Oligodendrogliomas.

We don’t know if the presence of kidney cancer in patients with oligodendroglioma tumors may indicate a novel association as a cancer susceptibility trait.

P09.14 CLONAL AND SUBCLONAL EVOLUTION OF 1P/19Q CO-DELETED OLIGODENDROGLIOMAS
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BACKGROUND: Time and space molecular heterogeneities are a major challenge to overcome to understand biological behavior of cancer and to design new anti-tumor therapeutic strategies. 1p/19q co-deleted oligodendrogliomas (CoDeO) is a particular subgroup of WHO grades II and III gliomas with well-described clinical and histomolecular features. However, to the best of our knowledge, the mutational and genomic evolution patterns of CoDeO has not been fully elucidated.

MATERIAL AND METHODS: We have performed 12 whole-exome sequencing (WES) at initial diagnosis and at recurrence of 5 CoDeO with available fresh-frozen tissue (two of them with 2 recurrences) and blood. Raw sequence data was aligned to hg38 genome build. Copy-number clonality, clonal mutations, subclonal mutations, ploidy and genomic signature analyses were conducted using R, Bioconductor and Python packages.

RESULTS: The somatic mutation burden of CoDeO at initial diagnosis is ~1 mutation/megabase and it increases at recurrence and mainly after alkylating agents (~4–10/megabase). Interestingly, even though some recurrences harbored a hypermutated phenotype we did not found a high microsatellite instability status within CoDeO using WES data. In addition, most of the subclonal mutations were functionally neutral. Finally, clonal and subclonal copy numbers at chromosomes 4 and 13 were frequently found.

CONCLUSION: Our study participates to a better deciphering of the clonal and subclonal evolutions of CoDeO. Our findings warrant further validation in a larger cohort of CoDeO.

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The rate of inclusion in protocols was increased since the opening of this web conference, especially for germ cell tumor SIOP that is opened without age restriction: half of the French patients were older than 19 Year. And the inclusion rate in RSMA standard risk adult medulloblastoma protocol was also increased.

CONCLUSION: Multidisciplinary Web conference for AYAs is feasible and increases the inclusion rate in protocols. It should be developed further.

P09.15 LOW GRADE GLIOMA: A SURVEY OF UK NATIONAL PRACTICE
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INTRODUCTION: Brain tumours are the leading cause of cancer death in the under 40 years old in the UK. Over the last 15–20 years there has been a significant shift in the management of Low Grade Glioma (LGG), with increasing evidence that upfront resection can improve outcome. However, there remains a perceived variation in management between clinical teams across the UK. We sought to obtain information about how LGG Neurosurgery & Oncology services are provided across the UK by means of a survey. Methods. Neurosurgical units in the UK were distributed a Society of British Neurological Surgeons approved questionnaire asking about LGG practices in their area. Paediatric hospitals were excluded. Results. There was a 53% response rate. 41% of units undertook surgery. Five years after diagnosis of glioma right partial nephrectomy was done due to CCRC.

Among average, 4 specialists will attend specialised clinics. 2 - neuro-oncology clinics, and only a neurosurgeon - general clinics. 76% of the units aim for primary resection where possible; only 12% (two units) will start by observing the tumour even if focal and deemed resectable. Units seeing patients in general clinics have more tendency to biopsy routinely at presentation (p=0.027). Most centres (88%) offer surgery via awake craniotomy - with a variety of testing methods used. A positive correlation between operative numbers and the ability to offer awake surgery was noted. Following surgery for LGG, 65% initially follow their patients with serial scans while the remainder may refer patients for consideration of adjuvant therapy. Conclusions: Five years after guidelines were published by the European Association for Neuro-Oncology, a large proportion of respondents confirmed that they provide specialist LGG services in established multidisciplinary environments.

Whilst there is heterogeneity in the approaches to the management of these tumours, the majority of centres do recognise the value of upfront surgery with the aim of achieving significant bulk resection. The methodology surrounding awake craniotomy varies markedly across the UK centres. A unit-to-unit variation in the post-operative care of LGG patients was also noted, with disparity in which patients are referred for adjuvant therapy. This survey supports the establishment of a UK National LGG Working Group who can set up a regular National outcome audit & establish a National LGG Database.
Abstracts

7 years. Curative surgery was performed in 31 (75.6%) cases. Of these, a macroscopic residual was present in 21 (67.7%) cases.

Children aged more than 3 years underwent to radiotherapy in 30 cases (88.2%). All patients underwent to chemotherapy, scheme containing high dose chemotherapy with autologous bone marrow transplant (HDCT) were administered in 11 patients (32.3%). Schemes with exclusive standard dose chemotherapy (SDCT) were administered in 23 patients (67.7%); in particular temozolomide-based schemes (TMZ) were used in 17 cases (73.9%), and platinum-based schemes (CP) in the others 6 (26.1%).

In infants (aged less than 3 years), radiotherapy was excluded from primary treatment. These 7 (17%) patients underwent to postoperative chemotherapy, scheme with HDCT.

Global progression-free survival (PFS) of primary multimodal treatment was 24.7 months. Global overall survival was 77 months. In univariate analysis infant patients had better OS (not reached versus 38.56 months, p: 0.03). In older than 3 years, there were no significant differences in PFS for HDCT versus SDCT (p: 0.06) and for CP versus TMZ (p: 0.08). Multivariate analysis confirms the absence of significant differences for any groups (p: 0.51).

CONCLUSIONS: Historically, HDCT are associated with major toxicities, morbidity, and treatment-related mortality compared to SDCT. Moreover, TMZ are more manageable than CP (no need of central catheter or prolonged infusions), and this feature is very important in children.

If there will be data confirmed in prospective trials, a less aggressive but effective induction treatment would be useful for a better quality of life of these pediatric patients.

P10.03 THE PROGNOSTIC ROLE OF PRIMARY TREATMENT IN PEDIATRIC HIGH-GRADE GLIOMAS: THE EXPERIENCE AT MEYER CHILDREN’S HOSPITAL

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BACKGROUND: primary treatment of pediatric high-grade gliomas (HGG) includes surgery (S), followed by radiotherapy (R) and chemotherapy (C). In case of disease relapse, C and, less frequently S or R, can be used again to control tumor growth.

METHODS: retrospective analysis of outcomes in pediatric patients with HGG, treated with different lines of multimodal therapy.

RESULTS: from 2008 to 2015, forty-one patients with diagnosis of HGG were treated in our center. The median age was 7 years. All patients underwent to primary treatment with radical intent S in 31 cases (75%), and with R in 32 cases (73%). In infants, R was excluded from primary treatment. All patients (100%) underwent to C. The median overall survival (OS) was 77 months. Twenty-four patients (58.5%) experienced disease progression. After progression 22 (91.6%) and 10 patients (41.6%) were treated with secondary and tertiary multimodal treatments, respectively.

CONCLUSIONS: in pediatric high-grade glioma, the impact on OS of post-relapse treatment is low. Primary multimodal treatment and relative supportive care for maintenance of adequate dose-intensity are essential for survival of these children. Sequential therapy strategies are not recommended.

P10.04 K27M MUTATION IN HISTONE H3.3 DEFINES A DIFFERENT DISEASE IN PEDIATRIC AND YOUNG ADULT HIGH GRADE GLIOMAS WITH UNIQUE CLINICAL FEATURES: THE FLORENTINE EXPERIENCE WITH LITERATURE REVIEW

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BACKGROUND: in pediatric and young adult patients with high-grade gliomas (HGG) some molecular alterations were studied. K27M mutation in histone H3.3 seems to have more clinical implications.

METHODS: retrospective molecular analysis with literature review and data integration.

RESULTS: from 2008 to 2015, forty-one patients with diagnosis of HGG were treated in our center. Twenty-seven were evaluable for molecular analyses. Median age was 6 years (range 0–27). GBM histology occurred in 25.9% of cases. K27M mutation occurred in 22.2% of patients, with median age of 9 years (range 4–27). These patients had a worse prognosis compared to the overall survival of 21.5 months (p: 0.004). In literature, percentages of K27M mutation were described in other 6 publications. The overall evaluation included 224 patients (5.1% from our analysis). Median percent of GBM histology and K27M mutation were 79.2% (25.9-100%) and 32.4% (22-100%), respectively.

CONCLUSIONS: in pediatric and young adult patients, HGG with K27M mutation represents a disease with unique clinical features, mainly characterized by midline tumor localization, prevalent GBM histology, and a worse prognosis, with similar survivals to adults.

P10.05 PERIODIC ASSESSMENT WITH OPTICAL COHERENCE TOMOGRAPHY IN CHILDREN TREATED WITH MULTIMODAL THERAPIES FOR BRAIN TUMORS

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We performed a retrospective analysis on periodic ophthalmologic assessments with Optical Coherence Tomography (OCT), Best Corrected Visual Acuity (BCVA) and clinical optic examination (OCE) in children treated for brain tumors.

We identified 40 evaluable patients treated from 2003 to 2014 at our institution. Therapies was established on histology and staging. Surgery and radiotherapy were performed in 18 and 23 patients, respectively. All patients underwent to chemotherapy. Median follow-up time was 689 days.

Regarding OCT, mean Retinal Nerve Fiber Layer (RNFL) thickness was measured by SD-OCT using the ONH and the nerve fiber 3D disc protocol. We calculated an average value of RNFL thickness in all quadrants and its rate of change (micron/year). In case of surgery, all OCTs were performed after.

A reduction in RNFL thickness major than 5% from baseline was documented in 22.5% (left) and 25% (right) of patients. There were no significant differences between surgery, radiotherapy, high-dose or standard-dose chemotherapy, p: 0.236–1.00). Moreover, a decrease in RNFL thickness did not correlate with radiological or clinical disease progression, and with a worsening in BCVA independent from disease status.

Even if there aren’t reference values for RNFL thickness in children, a reduction major than 5% in 22–25% of patients was unexpected. In our series, this result did not correlate with a defined subgroup of treatment. However, all patients underwent to chemotherapy, which could be a cause.

A predictive role for reduction in RNFL thickness may be evaluated only with a much longer follow-up. Further studies are needed.

P10.06 OXAMATE ATTENUATES AEROBIC GLYOXYLIS, MOTILITY, VIABILITY AND PROLIFERATION OF MEDULLOBLASTOMA BUT LDHA SRNA DOES NOT

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INTRODUCTION: Medulloblastomas (MBs) are the most common solid malignant childhood brain tumour. Integrated genomic data has identified four distinct medulloblastoma sub-groups (Wnt, Shh, Group 3 and Group 4), which have different characteristic genetic abnormalities, and result in different clinical outcomes. Group 3 has the poorest prognosis, is the most frequently metastatic and characteristically over-expresses c-Myc. Lactate dehydrogenase A, known for its key role in aerobic glycolysis, is a downstream target of c-Myc and HIF1. Previous studies using magnetic resonance spectroscopy and 1H-magnetic resonance imaging have shown that medulloblastomas have a glycolytic metabolic phenotype. We hypothesised LDHA inhibition would result in a decrease in lactate concentrations and a change from a glycolytic to an oxidative phosphorylation metabolic phenotype, leading to decreased medulloblastoma viability, proliferation and motility.

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