survival (DMFS), disease free survival (DFS), and overall survival (OS) were 90.0%, 81.2%, 76.1% and 83.5%, respectively. Thirty patients received IMRT dose less than prescription dose, categorized as dose de-escalation group, with a median dose of 64Gy (60-68Gy). Of the 30 patients in dose de-escalation group, 24 were treated with induction chemotherapy and 21 were treated with concurrent chemotherapy. Other 234 patients received exactly prescription dose were categorized as standard dose group, with irradiation dose of 70Gy. Propensity scores were computed (30 patients for dose de-escalation group and 60 patients in standard dose group), and there is no significant difference in 5-year LRFS and 5 year OS between two groups (90.1% and 82.5% in standard dose group; 92.0% and 80.1% in dose de-escalation group, $p=0.354$ for LRFS and 0.879 for OS). No independent prognostic factor, including age, gender, T stage, N stage and RT dose, was associated with loco-regional failure in multivariate analysis.

Conclusion: In our results, highly selected T1-3 nasopharyngeal carcinoma, especially those with response to induction chemotherapy, a moderate de-escalation dose delivered with IMRT are with comparable outcomes to those of standard dose.

Author Disclosure: **X. Wang**: None. **Z. Yin**: None.

MO_41_2861

A Pilot Trial Assessing Apatinib in Advanced Head and Neck Squamous Cell Carcinoma That Failed in Previous Standard Chemotherapy or Chemoradiotherapy

H. Wu,[1] X. Lu,[2] J. Xu,[3] X. Sun,[3] S. Wang,[3] W. Du,[3] S. Liu,[3] and D. Li[4]; *[1]The Affiliated Cancer Hospital of Zhengzhou University, ZhengZhou, China, [2]Affiliated Cancer Hospital of Zhengzhou University, Zhengzhou, China, [3]Affiliated Cancer Hospital of Zhengzhou University, Zhengzhou, China, [4]The Affiliated Cancer Hospital of Zhengzhou University, Zhengzhou, China*

Purpose/Objective(s): Effective therapy is not available for patients (pts) with recurrent or metastatic squamous cell carcinoma of head and neck (SCCHN) that was previously treated with standard chemotherapy or chemoradiotherapy. This study aimed to investigate apatinib (a novel anti-angiogenic agent) in combination with or without radiotherapy (RT) in treatment of this cohort of patients.

Materials/Methods: Unresectable SCCHN pts after failure of at least one line of therapy were initially treated with 500 mg qd apatinib. Dose reduction to 250 mg qd was allowed. Palliative local RT (GTV: 50-60 Gy/25-30 f; CTV: 40-50 Gy, 5 f/w) was given to Stage IVB pts who could tolerate concurrent RT.

Results: Between Jun 2017 and Nov 2017, 16 pts were enrolled. The median age was 60 yrs; 75.0% were male; 68.8% had 2 lines of chemotherapy, 25.0% failed after postoperative chemotherapy following second surgery, and 6.2% experienced RT and multiline chemotherapy. In this study, 8 (50.0%) pts received apatinib plus RT. At the cut-off date of 01/10/2018, the best objective response rate (ORR) and disease control rate (DCR) were 25.0% and 50.0% for apatinib alone and up to 87.5% and 100.0% for apatinib plus RT, respectively. Treatment related adverse events (TRAEs) were reported by 3 (37.5%) apatinib-treated pts and all pts receiving apatinib plus RT. The incidence of grade 3/4 TRAEs was 25.0% for apatinib alone, mainly hypertension. While 75.0% pts receiving apatinib plus RT had grade 3/4 TRAEs, including fistula (n=3), hand-foot skin reaction (n=1), heart failure (HF; n=1) and leukocyte decrease (n=1). Fistula and HF were improved by treatment interruption for one week and symptomatic therapy, and the dose were reduced to 250 mg qd thereafter. There was no treatment-related death.

Abstract MO_41_2861; Table 1 Efficacy and safety data

	Total	Apatinib	Apatinib plus RT
Complete response	3	0	3
Partial response	6	2	4
Stable disease	3	2	1
Progressive disease	4	4	0
ORR	56.3%	25.0%	87.5%
DCR	75.0%	50.0%	100.0%
TRAEs	11 (68.8%)	3 (37.5%)	8 (100.0%)
Grade 3-4 TRAEs	8 (50.0%)	2 (25.0%)	6 (75.0%)

Conclusion: Over 50% of pretreated SCCHN pts responded to apatinib. Apatinib plus RT seems to be more effective; however, occurrence of fistula should be paid close attention. These results support further investigation of this regimen in a larger confirmatory clinical tria.

Author Disclosure: **H. Wu**: None. **X. Lu**: None. **J. Xu**: None. **X. Sun**: None. **S. Wang**: None. **W. Du**: None. **S. Liu**: None. **D. Li**: None.

MO_41_2862

Radiation Therapy in Extracranial Chondrosarcomas: A Multicenter French Sarcoma Group and Rare Cancer Network Study

M. Terlizzi,[1] E. Rapeaud,[2] C. Le Pechoux,[3] S. Salas,[4] D. Lerouge,[2] M.P. Sunyach,[5] G. Vogin,[6] C.V. Sole,[7] T. Zilli,[8] L. Myroslav,[9] A. Mampuya,[10] F.A. Calvo,[11] J. Attal,[12] B. De Bari,[13] M. Ozsahin,[10] P. Sargos,[1] and J.O. Thariat[2]; *[1]Department of Radiation Oncology. Institut Bergonie, Bordeaux, France, [2]Department of Radiation Oncology. Centre Baclesse, Caen, France, [3]Institut Gustave Roussy, Villejuif, France, [4]Assistance Publique Hôpitaux de Marseille, Timone Hospital, Marseille, France, [5]Centre Léon Berard, Lyon, France, [6]Institut de Cancerologie de Lorraine, Vandoeuvre Les Nancy, France, [7]Clinica Instituto de Radiomedicina (IRAM), Santiago, Chile, [8]Radiation Oncology, Geneva University Hospital, Geneva, Switzerland, [9]Rambam HCC, Haifa, Israel, [10]Centre Hospitalier Universitaire Vaudois (CHUV), Department of Radiation Oncology, Lausanne, Switzerland, [11]Hospital General Universitario Gregorio Maranon, Madrid, Spain, [12]IUCT-Oncopole, Toulouse, France, [13]Centre Hospitalier Régional Universitaire "Jean Minjoz", Université de Bourgogne - Franche Comté, Besancon, France*

Purpose/Objective(s): Chondrosarcomas (CHS) are considered as radio-resistant tumors requiring high-dose radiation therapy (RT). Skull base CHS are a validated indication for protontherapy. CHS from other anatomic sites are systematically contra-indicated for RT on an institution-dependent way, regardless of grade and quality of resection. The main objective of our study was to assess the impact of RT in extracranial CHS.

Materials/Methods: Patients were extracted from the CONTICABASE, the database from the French Sarcoma Group (where all samples are reviewed for proper diagnosis), and additional data from the Rare Cancer Network were considered. All consecutive non metastatic extracranial CHS treated in a curative intent were included, regardless of RT.

Results: Between 2005 and 2014, 226 patients (125 men, 55%; median age 52 [range 11-90]), met inclusion criteria. Performance status was 0 in 50%, 1 in 46% and 2 in 4% of patients. ASA operability score was 0-1 in 65%, 2 in 20%, or >2. Primary site was a limb in 57%, thorax/spine in 24%, head and neck in 10% and abdomen/pelvis in 9%. It affected bone in 58% or soft-tissues in 42%. Grade was 1, 2, and 3 in 43%, 42%, and 15%; respectively. CHS was myxoïd, mesenchymal, dedifferentiated, periosteal in 28%, 10%, 5%, or 4%, respectively and NOS/other in most cases (53%). Surgery was performed in 89% with en bloc resection, and 76% of patients were considered as R0. RT was performed in 85 (37,6%) patients combined to surgery or as exclusive local treatment. Among irradiated patients 46 (54%), 18 (21%), 15 (18%) and 6 (7%) were grade 2, 1, 3 and unclassified respectively. Mean dose was 54Gy (range 26-70Gy). Three-dimensional RT, Intensity-modulated RT and protontherapy were used in 71%, 24% and

5% respectively. Thirty-nine (17%) patients had adjuvant chemotherapy. With a median follow-up period of 54,5 months (range 1-532), there were 84 (37,1%) relapses including 49 local relapses within median 48 months, 13 regional within 71 months, and 65 metastatic ones within 42 months. At last follow-up, 56% of the patients were alive without disease; and 11% and 29% of the patients were alive or dead with disease, respectively. Of the 62 locoregional relapsing patients, there were 15 (24%) in the irradiated vs 47 (76%) in the non-irradiated patients. Late grade 3 or more toxicity was noted in 3 patients.

Conclusion: Extracranial chondrosarcoma is a rare entity but this large database study seems to show that these patients have a better outcome when RT (postoperative or exclusive) is administered.

Author Disclosure: **M. Terlizzi**: None. **E. Rapeaud**: None. **C. Le Pechoux**: None. **S. Salas**: None. **D. Lerouge**: None. **M. Sunyach**: None. **G. Vogin**: None. **C.V. Sole**: None. **T. Zilli**: Treasurer; Thomas Zilli. **L. Myroslav**: None. **A. Mampuya**: None. **F.A. Calvo**: None. **J. Attal**: None. **B. De Bari**: None. **M. Ozsahin**: None. **P. Sargos**: None. **J.O. Thariat**: None.

MO_41_2863

The METABANK Score: A Clinical Tool to Predict Survival after Stereotactic Radiation Therapy for Oligometastatic Disease

R. Van den Begin, B. Engels, C. Collen, and M. De Ridder; *Radiotherapy Department, UZ Brussel, Vrije Universiteit Brussel, Brussels, Belgium*

Purpose/Objective(s): Stereotactic radiotherapy (SRT, SBRT) is nowadays widely used in oligometastatic cancer. The oligometastatic state is however vaguely demarcated and the heterogeneity of the population complicates estimation of the prognosis. We aimed to investigate the role of different clinical parameters, the modified Glasgow Prognostic Scale, the Neutrophil-Lymphocyte Ratio, and the influence of metformin and aspirin use.

Materials/Methods: Patients were included if treated in our center with SRT for 1-5 oligometastases between 2003 and 2017. Patients were randomized between a model training set (2/3) and a separate validation set (1/3). A Cox regression model was built, validated and risk points were attributed to the resulting parameters.

Results: A total of 403 patients received SRT for 760 metastases and median follow-up reached 42 months. Treated sites were mainly lung, liver, nodal areas, and brain. Most common primaries were colorectal and lung cancer. Median OS (MS) was 26.6 months for the complete cohort (95% CI 23.8-29.3). Five independent adverse factors were discriminated: Male sex, synchronous Timing of oligometastatic occurrence, Brain metastasis, Non-adenocarcinoma histology, KPS$<$80. A risk score is formed by summation of the points of each factor (M:4, T:2, B:7, N:7, K:8). Four risk groups were defined: (1) 0-2 points: MS 41.2 months (95% CI 30.2-52.3); (2) 3-8 points: 29.3 months (24.6-34.0); (3) 9-13 points: 17.4 months (10.1-24.7), and (4) 14-28 points: 7.9 months (5.5-10.3).

Conclusion: We propose a prognostic score that can be used in a variety of primary tumors and disease locations, including presence or absence of brain metastases. The nomogram and risk groups can be used to stratify patients in new trials and support a multidisciplinary tumor board to offer individualized care for oligometastatic patients.

Author Disclosure: **R. Van den Begin**: None. **B. Engels**: None. **C. Collen**: None. **M. De Ridder**: Research Grant; Kom op Tegen Kanker, Antikankerfonds, Stichting tegen Kanker. Data management support; Accuray.

MO_41_2864

Safety of TTFields Applied to the Torso: Meta-analysis of 176 Patients from Four Phase I-II Trials

I. Vergote,[1] M. Benavides,[2] M. Pless,[3] and G. Ceresoli[4]; [1]*Universitaire Ziekenhuizen Leuven, Leuven, Belgium,* [2]*Hospital Universitario Regional y Virgen de la Victoria, Andalucía, Spain,* [3]*Chefarzt Medizinische Onkologie, Winterthur, Switzerland,* [4]*Istituto Clinico Humanitas IRCCS, Rozzano (MI), Italy*

Purpose/Objective(s): Tumor Treating Fields (TTFields) is a non-invasive, loco-regional, antimitotic treatment modality, approved for glioblastoma. TTFields are delivered to the tumor through transducer arrays applied non-invasively to the tumor region. In a phase 3 trial in newly diagnosed glioblastoma (GBM), TTFields added to temozolomide was not associated with any significant increase in systemic adverse events (AEs) versus temozolomide alone. The only treatment-related AE seen in TTFields-treated patients was localized dermatitis underneath the arrays. Mild-moderate dermatitis was reported in 52% of patients (2% had grade 3 skin toxicity). The safety of TTFields was investigated in four phase I-II studies in non-small-cell lung cancer (NSCLC), mesothelioma, pancreatic cancer and ovarian cancer.

Materials/Methods: TTFields studies included in analysis: EF-15 (n$=$41, advanced NSCLC; plus pemetrexed), PANOVA (n$=$40, advanced pancreatic adenocarcinoma; plus gemcitabine with or without nab-paclitaxel), STELLAR (n$=$64, malignant pleural mesothelioma; plus platinum and pemetrexed) and INNOVATE (n$=$31, recurrent ovarian carcinoma; combined with weekly paclitaxel). TTFields were applied 12 - 18 hours/day at frequency of 150-200 kHz per tumor histology. All patients received standard of care systemic chemotherapy for their disease in addition to TTFields. Severity and frequency of AEs, and association with TTFields treatment were evaluated (CTCAE criteria).

Results: The median age of patients was 69 (range: 41-81), 73 (49-81), 68 (43-78) and 60 (45-77) for EF-15, PANOVA, STELLAR, and INNOVATE, respectively. Patients had an ECOG score of 0-1; 7 patients in the EF-15 study had ECOG 2. The incidence of grade 1-2 gastrointestinal (GI) toxicities was $\geq$5%: constipation (16%), diarrhea (14%), nausea (27%) and vomiting (13%). Grade 1-2 general disorders such as asthenia, fatigue and anorexia were common ($<$20%). Grade 3-4 dyspnea (6%) was reported in patients with lung tumors. These AEs were related to standard chemotherapy or underlying disease. The incidence of arrhythmias was $\leq$2% and none were severe. The only common TTFields-related adverse event was dermatitis beneath the transducer arrays. 50% patients had dermatological AEs: Grade 1-2 dermatitis in 50% of and grade 3 dermatitis in 6% of patients. 7% of patients complained of grade 1-2 pruritus. Dermatologic AEs were managed using published guidelines leading to full resolution in all cases.

Conclusion: Treatment of solid tumors with TTFields at 150-200 kHz to the lungs, abdomen and upper pelvis did not result in serious AEs or treatment related pulmonary, cardiac, hematological or gastrointestinal toxicity. Expected dermatological toxicity beneath the device transducer arrays was seen in 50% patients, and resolved after treatment termination.

Author Disclosure: **I. Vergote**: Consultant; Novocure, Amgen, Astra Zeneca, BMS, Eli Lilly. **M. Benavides**: None. **M. Pless**: None. **G. Ceresoli**: None.

MO_42_2865

Utilizing Organ-Sparing Marrow-Targeted Irradiation (OSMI) to Condition Patients with High-risk Hematologic Malignancies Prior to Allogeneic Hematopoietic Stem Cell Transplantation: Results from a Prospective Pilot Study

M.X. Welliver,[1] S. Vasu,[2] M. Weldon,[2] W. Zoller,[2] M. Addington,[2] D. Eiler,[2] N.K. Jacob,[1] N. Denko,[2] D.D. Martin,[2] N. Gupta,[3] A. Liu,[4] Y. Rong,[5] J.Y.C. Wong,[4] J.R. White,[6] and S. Devine[2]; [1]*Department of Radiation Oncology, The Ohio State University Comprehensive Cancer Center, Columbus, OH,* [2]*The Ohio State University Wexner Medical Center, Columbus, OH,* [3]*The Ohio State University Comprehensive Cancer Center, Columbus, OH,* [4]*City of Hope National Medical Center, Duarte,*