### INTRODUCTION

- BM are frequent in NSCLC, often poor outcome and negative impact on quality of life
- BM incidence is rising; better imaging techniques, new systemic txs resulting in longer overall survival (OS)
- BM management becomes increasingly important but txs and guidelines differ
- Use of WBRT challenged by the QUARTZ trial
- Use of SRS for BM is variable (eg number of BM treated)
- Upfront treatment (tx) with systemic agents (chemotherapy, tyrosine kinase inhibitors (TKI) in driver mutation (MUT+) patients and possibly immunotherapy (IO) is an option but guidelines differ regarding the advice to use upfront systemic txs.

### MATERIAL AND METHODS

- Online (Google® form) developed by the YI EORTC LCG
- Distributed on 16/04/17 to all EORTC LCG and radiation oncology group members, and national cancer societies in Europe (medical and radiation oncology, pulmonology, neurology) were contacted to forward the survey to their members
- Responses were collected until 15/04/17
- Six sections with in total 27 questions: physician (phys) demographics, BM screening, initial tx decision, surgery, radiotherapy, systemic txs

### RESULTS – PHYSICIAN’S DEMOGRAPHIC DATA

63% responders; 96% completed specialty training
- 52% radiation oncologist, 26% pulmonologist, 10% medical oncologist, 3% other
- 18% Italy, 15% Netherlands, 14% UK, 12% France, 10% Belgium, 7% Spain, 5% Austria, 3% Portugal, 3% Germany, 3% Denmark, 2% Switzerland, 5% others

### RESULTS – SCREENING FOR BRAIN METASTASES

52.2% of physicians used MRI to screen neurologically asymptomatic patients

### RESULTS – LOCAL TREATMENTS

<table>
<thead>
<tr>
<th>% of Physicians using a prognostic classification</th>
<th>2006 Classification</th>
<th>2018 Classification</th>
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<tr>
<td>Threshold in BM less than 2 cm</td>
<td>51.6%</td>
<td>72%</td>
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<td>Threshold &gt; 2 cm</td>
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### RESULTS – SYSTEMIC TREATMENT

- Preferred systemic tx in a neurologically asymptomatic tx-naïve patient with > 5 BM was in MUT+: platinum-based doublet (79%), bevacizumab containing regimen (7%) and in MUT+: MUT+ specific tx (15%)
- In MUT+ patients in BM progression, use of concurrent RT / systemic tx and duration of discontinuation of systemic tx during RT varies widely between centers
- 45% discontinued all TKI and anti-PD-(L)1 therapy during WBRT/SRT Most often continued: erlotinib (44-40%), bevacizumab (29-24%), crizotinib (13-28%)

### RESULTS – TREATMENT DECISIONS

- Use of adjuvant RT after surgery and maximum BM number / size for SRS eligibility varied
- MUT+ with > 4 BM more likely to receive SRS than MUT- (p=0.04)

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### CONCLUSION

- Screening is not uniform, prognostic classifications are not often used
- BM management differs
- Less WBRT is used following the publication of the QUARTZ trial
- Local tx (adjuvant tx, number and volume of BM) for BM varies
- MUT+ patients generally receive more aggressive local tx
- There is a lack of data on safety for most targeted agents in combination with brain RT

### FUTURE DIRECTIONS

- BM management harmonization should be pursued
- Specific guidelines for MUT+ patients should be set up to help physicians with their management
- Future research regarding concurrent use of targeted agents and brain RT is needed

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**LITERATURE**

2. Tsao et al. Thorac Cancer 2014;5:12-18
5. MRC UK, RCR, BTOG; Belgium: BVRO/ABRO; Switzerland: SAKK; Germany: DEGRO; Italy: AIRO, postgrad school med oncol & radiation oncology; Ireland: Cancer Trials Ireland; ERS: thoracic assembly