**Supplemental Digital Content 4: Response to first systemic therapy.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |   | **ChT** | **IT** | **TT** |
| **Responsea to first systemic treatment (n)** |   | (n=17) | (n=9) | (n=3) |
| yes |  |   | 7 | 2 | 3 |
| no |  |   | 9 | 6 | 0 |
| unknown |  |   | 1 | 1 | 0 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  | **Ipilimumab** | **Tremelimumab** |
| **Responsea to immunotherapy as first-line treatment (n)** | (n=8) |  (n=1) |   |
| yes |  |  | 2 |  0 |  |
| no |  |  | 5 |  1 |  |
| unknown |   |   | 1 |  0 |   |

All variables are reported in absolute numbers (n).

adefined as partial or complete response to therapy at 3 months follow-up by PET-CT; ChT, chemotherapy; IT, immunotherapy; TT, targeted therapy.

Chemotherapy included dacarbazine, temozolamide, avastin, vinorelbine+cisplatin (VP), taxol and depocyte.
Immunotherapy included ipilimumab, pembrolizumab tremelimumab.

Targeted therapy included BRAF-inhibitors (vemurafenib), MEK-inhibitors (trametinib, selumetinib), BRAF/MEK-inhibitors (dabrafenib+trametinib), multikinase inhibitors (imatinib, sorafenib) and tyrosine kinase inhibitors (nilotinib, pazopanib).

For analysis of first systemic treatment 1 patient was excluded, because he got dacarbazine/adeno-IL-2 as first treatment.

1. Balch CM, Gershenwald JE, Soong SJ, Thompson JF, Atkins MB, Sondak VK *et al.*  Final version of 2009 AJCC melanoma staging and classification. *J Clin Oncol* 2009; **27**:6199-206.