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1-5 MARCH 2019

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Oncology and surgery Dra. Leyre Aguado Gil



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### **UPDATES IN MERKEL CELL CARCINOMA THERAPIES**



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- Immunotherapy in Merkel cell carcinoma:
  - Avelumab (anti PD-L1) approved April 2017
  - Pembrolizumab (anti PD-1) approved December 2018

J Clin Oncol. 2019 Feb 6:JCO1801896. doi: 10.1200/JCO.18.01896. [Epub ahead of print]

Durable Tumor Regression and Overall Survival in Patients With Advanced Merkel Cell Carcinoma Receiving Pembrolizumab as First-Line Therapy.

Nghiem P1, Bhatia S1, Lipson EJ2, Sharfman WH2, Kudchadkar RR3, Brohl AS4, Friedlander PA5, Daud A6, Kluger HM7, Reddy SA8, Boulmay BC9, Riker Al<sup>9</sup>, Burgess MA<sup>10</sup>, Hanks BA<sup>11</sup>, Olencki T<sup>12</sup>, Margolin K<sup>13</sup>, Lundgren LM<sup>14</sup>, Soni A<sup>2</sup>, Ramchurren N<sup>14</sup>, Church C<sup>15</sup>, Park SY<sup>15</sup>, Shinohara MM<sup>15</sup>, Salim B<sup>16</sup>, Taube JM<sup>2</sup>, Bird SR<sup>17</sup>, Ibrahim N<sup>17</sup>, Fling SP<sup>14</sup>, Homet Moreno B<sup>17</sup>, Sharon E<sup>18</sup>, Cheever MA<sup>14</sup>, Topalian SL<sup>2</sup>.

# UPDATES IN MERKEL CELL CARCINOMA THERAPIES



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# PD-1 /PD-L1 blockade superior to chemotherapy

	Avelumab	Avelumab	Pembrolizumab	Nivolumab (off label use)	Chemotherapy	Chemotherapy
Patients	88	29	50	22	62	30
Timing of therapy	≥2nd line	1st line	1st line	1st and 2nd line	1st line	2nd line
Type of study	Phase 2	Phase 2	Phase 2	Phase 2	retrospective	retrospective
Overall Response Rate	33% (CI 23-44)	62% (CI 42-79)	56% (CI 35-76)	68% (CI 45-86)	55%	23%
Complete response	11%	14%	24%	14%	13%	3%
Partial response	22%	48%	32%	55%	42%	20%
Median duration of response (mo)	Not reached (CI 18-NE)	Not estimable	Not reached (RG 5.9-34.5+)	Not reported	2.8 (RG 0.4-30.9)	3.3 (RG 0.2-7.4)

### REFERENCES



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- Kaufman HL et al. Updated efficacy of avelumab in patients with previously treated metastatic Merkel cell carcinoma after ≥1 year of follow-up: JAVELIN Merkel 200, a phase 2 clinical trial. J Immunother Cancer. 2018;6(1):7
- D'Angelo SP et al. Efficacy and Safety of First-line Avelumab Treatment in Patients With Stage IV Metastatic Merkel Cell Carcinoma: A Preplanned Interim Analysis of a Clinical Trial. JAMA Oncol. 2018;4(9):e180077.
- Nghiem P et al. Durable Tumor Regression and Overall Survival in Patients With Advanced Merkel Cell Carcinoma Receiving Pembrolizumab as First-Line Therapy. J Clin Oncol. 2019 Feb 6:JCO1801896
- Topalian et al. Abstract CT074: Non-comparative, open-label, multiple cohort, phase 1/2 study to evaluate nivolumab (NIVO) in patients with virus-associated tumors (CheckMate 358): Efficacy and safety in Merkel cell carcinoma (MCC). Cancer Res July 1 2017 (77) (13 Supplement) CT074; **DOI:**10.1158/1538-7445.AM2017-CT074
- Iyer JG et al. Response rates and durability of chemotherapy among 62 patients with metastatic Merkel cell carcinoma. Cancer Med. 2016 Sep;5(9):2294-301.



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Lancet Oncol, 2018 Sep;19(9):1192-1204, doi: 10.1016/S1470-2045(18)30379-6. Epub 2018 Aug 9.

# Mogamulizumab versus vorinostat in previously treated cutaneous T-cell lymphoma (MAVORIC): an international, open-label, randomised, controlled phase 3 trial.

Kim YH<sup>1</sup>, Bagot M<sup>2</sup>, Pinter-Brown L<sup>3</sup>, Rook AH<sup>4</sup>, Porcu P<sup>5</sup>, Horwitz SM<sup>6</sup>, Whittaker S<sup>7</sup>, Tokura Y<sup>8</sup>, Vermeer M<sup>9</sup>, Zinzani PL<sup>10</sup>, Sokol L<sup>11</sup>, Morris S<sup>7</sup>, Kim EJ<sup>4</sup>, Ortiz-Romero PL<sup>12</sup>, Eradat H<sup>13</sup>, Scarisbrick J<sup>14</sup>, Tsianakas A<sup>15</sup>, Elmets C<sup>16</sup>, Dalle S<sup>17</sup>, Fisher DC<sup>18</sup>, Halwani A<sup>19</sup>, Poligone B<sup>20</sup>, Greer J<sup>21</sup>, Fierro MT<sup>22</sup>, Khot A<sup>23</sup>, Moskowitz AJ<sup>6</sup>, Musiek A<sup>24</sup>, Shustov A<sup>25</sup>, Pro B<sup>26</sup>, Geskin LJ<sup>27</sup>, Dwyer K<sup>28</sup>, Moriya J<sup>28</sup>, Leoni M<sup>28</sup>, Humphrey JS<sup>28</sup>, Hudgens S<sup>29</sup>, Grebennik DO<sup>28</sup>, Tobinai K<sup>30</sup>, Duvic M<sup>31</sup>; MAVORIC Investigators.

- ⊕ Collaborators (47)
- Author information

#### Erratum in

Correction to Lancet Oncol 2018; 19: 1192-204. [Lancet Oncol. 2018]

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- Mogamulizumab:
  - monoclonal antibody
  - selectively binds to C-C chemokine receptor 4 (CCR4)
- Open-label, international, randomized trial
- 372 patients with relapsed or refractory mycosis fungoides or Sézary syndrome
  - at least one previous systemic therapy



- Overall response:
  - Mogamulizumab 28% vs Vorinostat 5%
- Response to Mogamulizumab
  - Mycosis fungoides: 21% vs Sézary syndrome: 37%
  - Skin 42%, blood 68%, lymph nodes 17%, viscera 0%
  - No correlation with tissue/blood CCR4 expression



Most common adverse events with mogamulizumab

- Infusion reaction (30%)
- Fatigue, diarrhea, infection, dermatitis (20-25%)

# **Cutaneous T-cell lymphoma**



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- CCR4 is highly expressed on both malignant and regulatory T cells.
  - Depletion of regulatory T cells following mogamulizumab
    - Augment antitumor response but also potentiate graft-vs-host disease (GVHD).
- Short interval (<50 days) between mogamulizumab and allo stem cell transplant: greater risk (28-50%) of severe acute GVHD

JAMA Dermatol. 2018 Jun 1;154(6):728-730. doi: 10.1001/jamadermatol.2018.0884.

Potential Association of Anti-CCR4 Antibody Mogamulizumab and Graft-vs-Host Disease in Patients With Mycosis Fungoides and Sézary Syndrome.

 $\underline{\text{Dai J}^1}, \underline{\text{Almazan TH}^1}, \underline{\text{Hong EK}^1}, \underline{\text{Khodadoust MS}^2}, \underline{\text{Arai S}^3}, \underline{\text{Weng WK}^{1,3}}, \underline{\text{Kim YH}^1}.$ 

J Clin Oncol. 2016 Oct 1;34(28):3426-33. doi: 10.1200/JCO.2016.67.8250. Epub 2016 Aug 9.

Pretransplantation Anti-CCR4 Antibody Mogamulizumab Against Adult T-Cell Leukemia/Lymphoma Is Associated With Significantly Increased Risks of Severe and Corticosteroid-Refractory Graft-Versus-Host Disease, Nonrelapse Mortality, and Overall Mortality.

Fuji S<sup>1</sup>, Inoue Y<sup>2</sup>, Utsunomiya A<sup>2</sup>, Moriuchi Y<sup>2</sup>, Uchimaru K<sup>2</sup>, Choi I<sup>2</sup>, Otsuka E<sup>2</sup>, Henzan H<sup>2</sup>, Kato K<sup>2</sup>, Tomoyose T<sup>2</sup>, Yamamoto H<sup>2</sup>, Kurosawa S<sup>2</sup>, Matsuoka K<sup>2</sup>, Yamaquchi T<sup>2</sup>, Fukuda T<sup>2</sup>.

### **BASAL CELL CARCINOMAS**



- New topical HH inhibitor: Patidegib
  - Phase 2:
    - Reduces BCC diameter
    - Fewer new BCC
    - Correlation of tumor response and biomarker (GLU1 mRNA)
    - Minimal systemic exposure

Now phase 3 trial