Morning Brief : Scientific Review

22 June 2020

The purpose of the Morning Brief is to **summarize** and present key information, research articles and other relevant publications pertaining to critical care and COVID-19. We aim to prioritise information, articles and publications released in the preceding 24-48hours.

Stellenbosch University Research Response Team

Content of the brief

- **Statistics**
- **Topic: Flow cytometry study**

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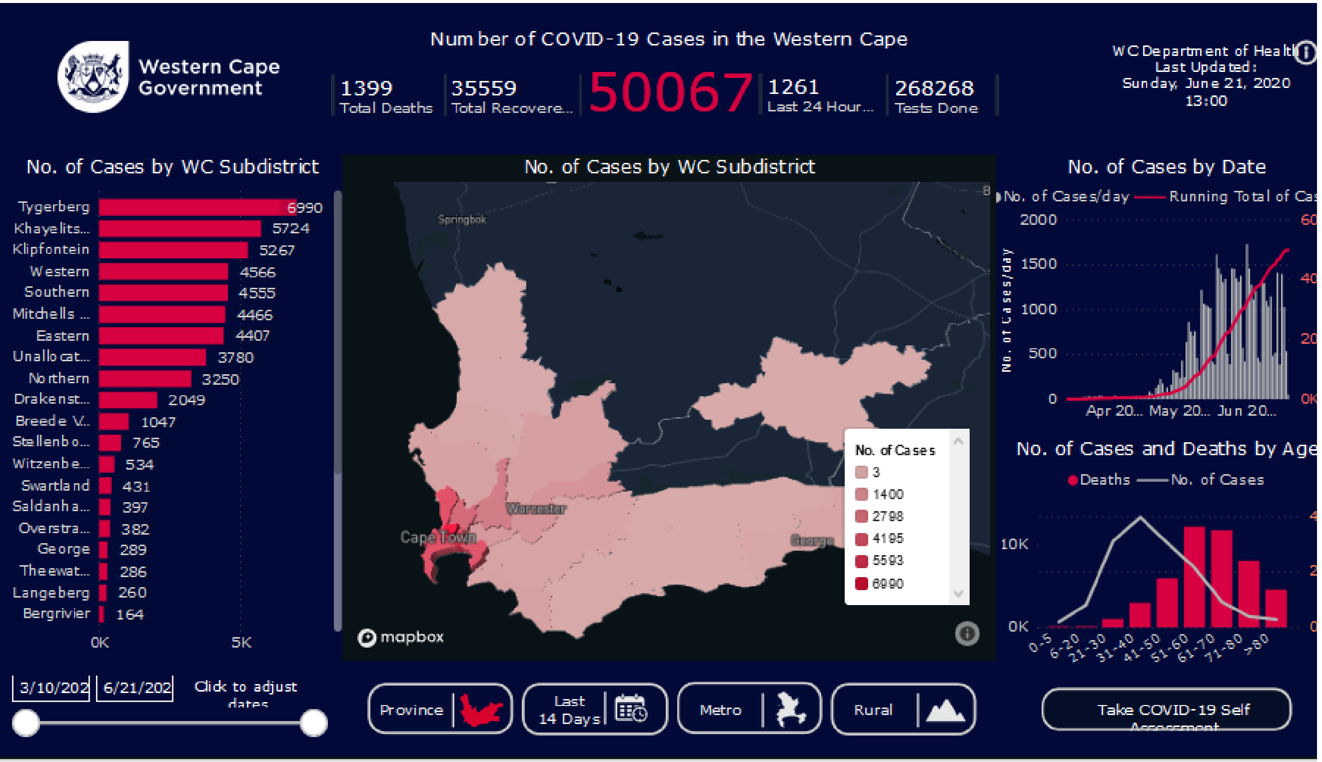

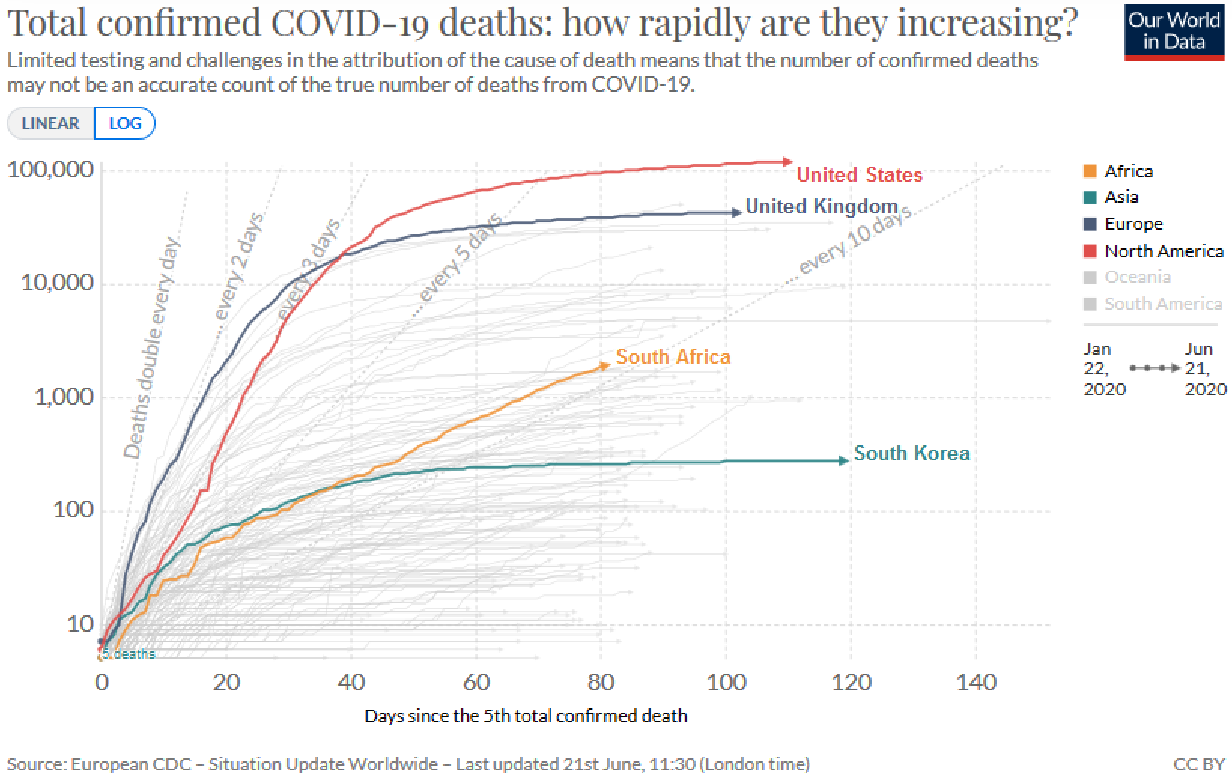

Articles of Interest

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MENU
Cellular & Molecular Immunology

Correspondence | Open Access | Published: 15 June 2020

Systemically comparing host immunity between survived and deceased COVID-19 patients

Feng Wang, Hongyan Hou, Yin Yao, Shiji Wu, Min Huang, Xiao Ran, Hongmin Zhou, Zheng Liu & Ziyong Sun

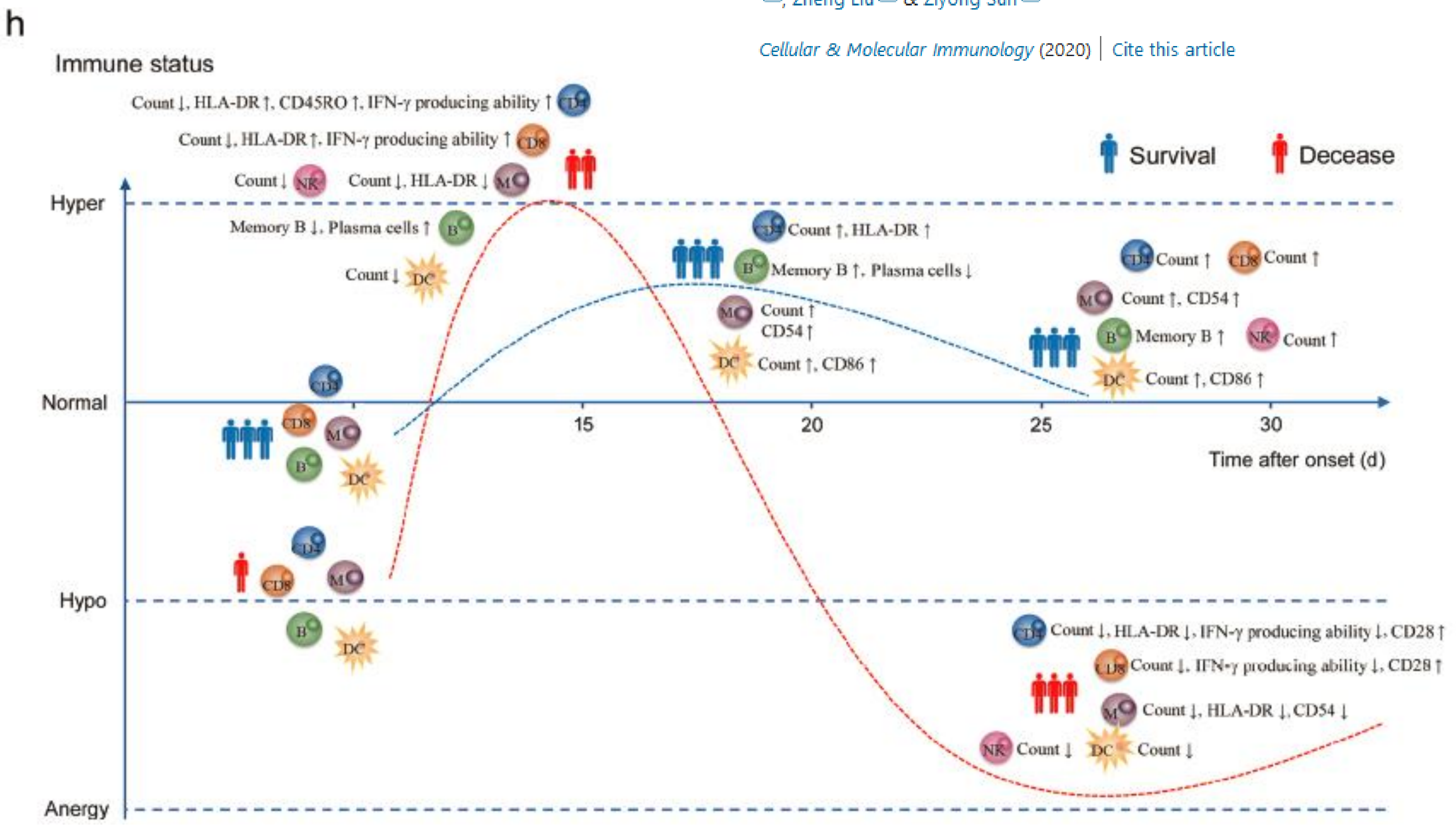
Cellular & Molecular Immunology (2020) | Cite this article

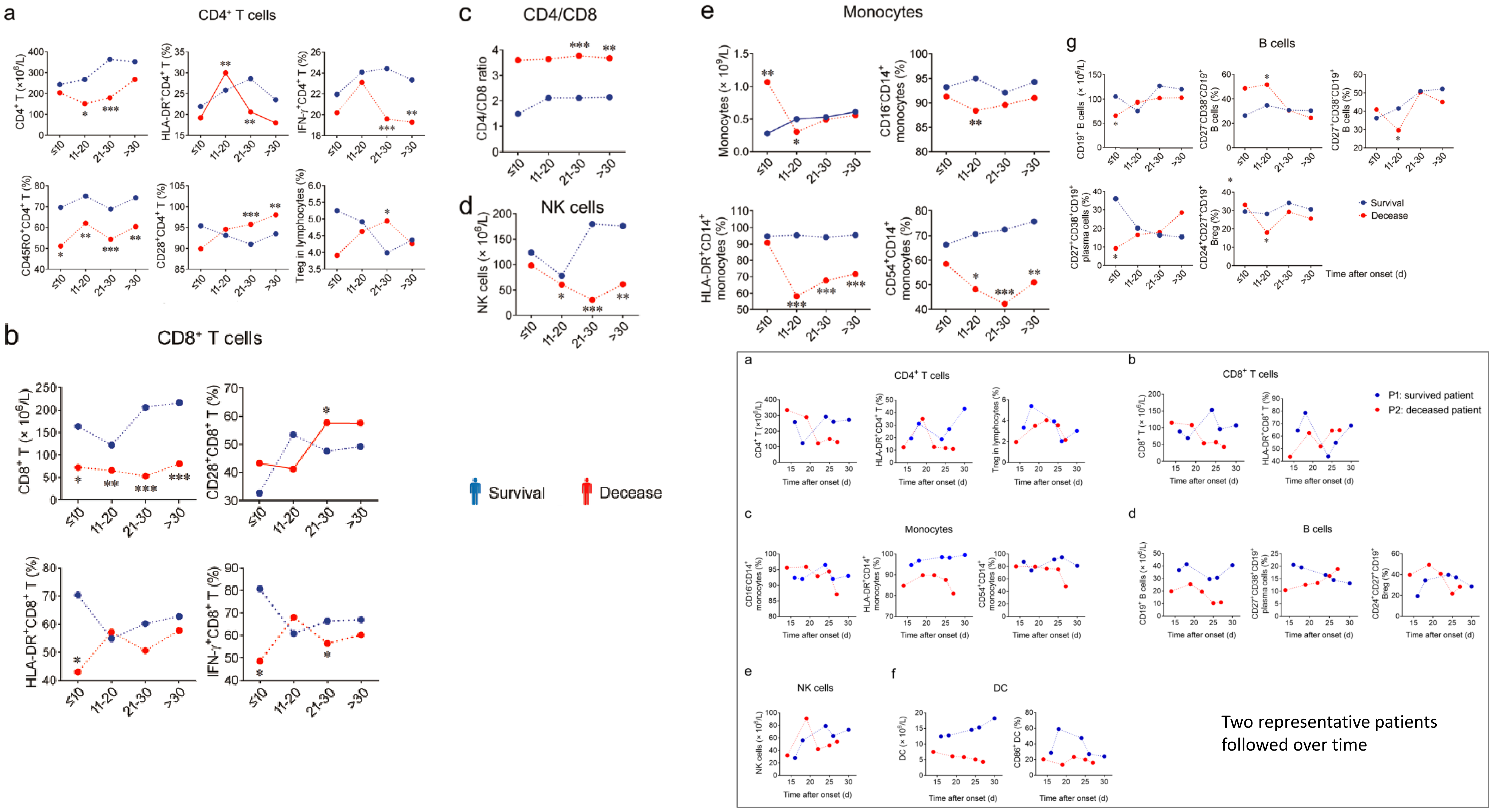
157 hospitalised Covid-19 patients, China
95 survivors, 62 deceased
classified the patients by time from symptom onset
- early (≤10 days) – 5 survived, 5 deceased
- middle (11–20 days) – 23, 12
- late (21–30 days) – 33, 32
- end (>30 days) - 34, 13

This is one sample per patient, but no explanation for how samples were chosen nor information on when deceased patients died relative to the sample?
Flow cytometry of T, B, dendritic cells and monocytes

Overall story seems to be, that patients who ultimately die, are initially slow to respond, then overreact and then become unresponsive.

Not clear at which point death sets in.
Not clear what happens to viral load at each of these stages.




a
CD4⁺ T cells
CD4⁺ T (×10⁶/L)
HLA-DR⁺CD4⁺ T (%)
IFN-γ⁺CD4⁺ T (%)
CD45RO⁺CD4⁺ T (%)
CD28⁺CD4⁺ T (%)
Treg in lymphocytes (%)
b
CD8⁺ T cells
CD8⁺ T (× 10⁶/L)
CD28⁺CD8⁺ T (%)
HLA-DR⁺CD8⁺ T (%)
IFN-γ⁺CD8⁺ T (%)
c
CD4/CD8
CD4/CD8 ratio
d
NK cells
NK cells (× 10⁶/L)
Survival
Decease
e
Monocytes
Monocytes (× 10⁹/L)
CD16⁻CD14⁺ monocytes (%)
HLA-DR⁺CD14⁺ monocytes (%)
CD54⁺CD14⁺ monocytes (%)
g
B cells
CD19⁺ B cells (× 10⁶/L)
CD27⁻CD38⁻CD19⁺ B cells (%)
CD27⁺CD38⁻CD19⁺ B cells (%)
CD27⁺CD38⁺CD19⁺ plasma cells (%)
CD24⁺CD27⁺CD19⁺ Breg (%)
Survival
Decease
Time after onset (d)
≤10
11-20
21-30
>30
a
CD4⁺ T cells
b
CD8⁺ T cells
P1: survived patient
P2: deceased patient
c
Monocytes
d
B cells
e
NK cells
f
DC
DC (× 10⁶/L)
CD86⁺ DC (%)
Time after onset (d)
Two representative patients followed over time

This summary was prepared by Dr E Maasdorp as part of the daily brief to the TBH ICU team.