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Does CD15 expression identify a phenotypically or genetically distinct glioblastoma population and possible therapeutic target?

Kenney-Herbert Emma
Cambridge University, UK

The prognosis for patients with glioblastoma (GB) remains poor. Recent research has focused on the hypothesis that the growth and regeneration of GB is sustained by a sub-population of self-renewing stem-like cells. This has led to the prediction that molecular markers for cancer stem cells in GB may provide a treatment target. One candidate marker is CD15; we wanted to determine if CD15 represented a credible stem cell marker in GB. We investigated CD15 as a potential marker for treatment in patient GB samples, primary GB cell lines (GBC) and in tumour forming assays in mouse models. We found that the prevalence of CD15+ cells was varied in 10 patient GB tumours and CD15+ cells were less proliferative than their CD15- counterparts. In vitro, CD15 did not confer a proliferative advantage. Furthermore, GBCs sorted for CD15+ and CD15- were not significantly different cytogenetically or in terms of gene expression profile. Sorted single CD15+ and CD15- cells were equally capable of reconstituting a heterogeneous population containing both CD15+ and CD15- cells over time; and both CD15+ and CD15- cells were able to generate tumours *in vivo*. Our data confirms that CD15 does not identify a sub-population of cancer stem cells. Instead, detailed single cell analysis suggests that CD15+ cells are a component of the variegated clonal architecture typical of GB. However, we believe there is a role for our experimental models to assist in the finding of further GB therapeutic targets.

Biography

Kenney-Herbert Emma completed her PhD from Cambridge University, UK. She graduated in Entry Medicine at Imperial College London and qualified in 2014. She is now working as a Junior Doctor at The Chelsea and Westminster Hospital, London. She plans to forge a career as an Oncologist and continue to play an active role in research.

emmakenneyherbert@yahoo.co.uk

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