Clonal Hematopoiesis and HIV Infection are Associated with Geriatric Outcomes: the ARCHIVE Study

Authors:
Han WM[1], Sazzad H[1], Bloch M[2], Baker D[3], Roth N[4], Bowden-Reid E[1], Don E. Smith[5,6], Hoy J[7], Woolley I[8,9], Finlayson R[10], Templeton D[11,12], Matthews G[1,13], Costello J[14], Dawson M[15,16,17], Dawson SJ[15,16,17], Polizzotto M[1,18], Petoumenos K[1], Yeh P*[19,20] and Dharan N*[1] for the ARCHIVE Study Group**

*These authors contributed equally

[1]Kirby Institute, University of New South Wales Sydney, Sydney, New South Wales, Australia
[2]Holdsworth House Medical Practice, Sydney, New South Wales, Australia
[3]East Sydney Doctors, Darlinghurst, New South Wales, Australia
[4]Prahran Market Clinic, Melbourne, Victoria, Australia
[5]Albion Centre, South Eastern Sydney Local Health District, Sydney, New South Wales, Australia.
[6]School of Population Health, University of New South Wales Sydney, Sydney, New South Wales, Australia
[7]Department of Infectious Diseases, Alfred Hospital and Monash University, Melbourne, Victoria, Australia
[8]Monash Infectious Diseases, Monash Health, Clayton, Victoria, Australia
[9]Centre for Inflammatory Diseases, Monash University, Clayton, Victoria, Australia
[10]Taylor Square Private Clinic, Darlinghurst, NSW, Australia
[11]Department of Sexual Health Medicine and Sexual Assault Medical Service, Sydney Local Health District, Sydney New South Wales, Australia
[12]Discipline of Medicine, Central Clinical School, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia
[13]St Vincent's Hospital, Darlinghurst, New South Wales, Australia
[14]Positive Life, Sydney, New South Wales, Australia
[15]Peter MacCallum Cancer Centre, Melbourne, Victoria, Australia
[16]Sir Peter MacCallum Department of Oncology, University of Melbourne, Melbourne, Victoria, Australia
[17]Centre for Cancer Research, University of Melbourne, Melbourne, Victoria, Australia
[18]Australian National University, Canberra, ACT, Australia
[19]Department of Medicine, School of Clinical Sciences at Monash Health, Monash University, Clayton, Victoria, Australia
[20]Monash Haematology, Monash Health, Clayton, Victoria, Australia

Background:
Clonal haematopoiesis (CH), an aging-related molecular phenomenon that is linked to adverse clinical outcomes, is increased in people living with HIV. Here we evaluated geriatric outcomes in older adults to determine whether HIV or CH is associated with these outcomes.

Methods:
Participants were enrolled from the ARCHIVE study, a prospective observational cohort of adults with and without HIV >55 years, and evaluated for CH and geriatric outcomes including frailty, phenotypic age acceleration (PAA), quality of life (QoL) and multimorbidity. Descriptive statistics compared baseline characteristics across HIV status. Multivariable logistic and linear regression was used to evaluate for associations between HIV and CH, and geriatric outcomes.

Results:
Of 345 participants, 176 had HIV and 169 did not. The median (interquartile range; IQR) age was 67 (62,72) years, 97% identified as male, 61% had a body mass index>25, 41% reported ever smoking. Overall, 23% had at least one CH mutation (27% of those with HIV and 18% of those without HIV; p=0.045), 7% were frail, the median (IQR) PAA was 0.6 years (-2.5,5.0), and the median (IQR) QoL score was 36 (29,39) out of 57. Participants with HIV had a median (IQR) duration of HIV of 27 (18,33) years and a median (IQR) CD4 nadir of 246 (143,372) cells/mm^3; all but one participant had a suppressed viral load. In adjusted analyses, HIV infection was associated with PAA (coefficients 1.73, 95% confidence interval [CI] 0.3-3.16, p=0.02) and CH was associated with reduced QoL (coefficients -2.18, CI -3.92, -0.44, p=0.01) and being frail (vs. pre-frail/robust; odds ratio 2.36, CI 1.01-5.63, p=0.049).

Conclusion:
In the ARCHIVE cohort, HIV was associated with PAA and CH, and CH was associated with frailty and reduced QoL, suggesting that CH may be used as a biomarker for geriatric outcomes that may prioritize individuals for interventions designed to reduce adverse geriatric outcomes.

Disclosure of Interest Statement:
MB has received funding from Gilead Sciences and ViiV Healthcare for lecturing, travel to scientific meetings and medical advisory boards. DAB has received funding, travel grants and served on advisory boards for ViiV Healthcare and Gilead. DES has received consultancy fees and lecturing honorarium from Viiv Healthcare and Gilead Sciences. JFH's institution has received reimbursement for her participation in Advisory Boards for Gilead Sciences and ViiV Healthcare. IW's institution has received financial or in-kind support for his role in clinical studies from Moderna, CSL, MSD, Gilead and ViiV. GVM has received research funding from Gilead, Abbvie, Janssen, and ViiV, has served on advisory boards for Astra Zeneca and ViiV, and has provided consultancy and received travel support from Gilead. MNP has received research funding from ViiV, Janssen, Gilead (awarded to institution), research support (in kind) from ViiV, Janssen, BMS, Verastem, ASTEX, Grifols, CSL Behring, Takeda, Emergent (in kind, to institution), and has served on the advisory board for AstraZeneca and Gilead. PY has received speaker honoraria from Astellas Pharmaceuticals for unrelated projects. NJD has received research support through the Gilead Australia Fellowship for an unrelated project. None of the other authors have any Competing Interests to declare.

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