https://doi.org/10.70401/Geromedicine.2026.0031

Supplementary information

Beyond chronological age: Sex and IL-6 are associated with natural killer cell and monocyte counts in a Sicilian cohort spanning adulthood to extreme longevity

Giorgio Bertolazzi, Anna Calabrò, Giulia Accardi, Anna Aiello, Calogero Caruso, Anna Maria Corsale, Marta Di Simone, Rosalia Caldarella, Serena Meraviglia, Giuseppina Candore

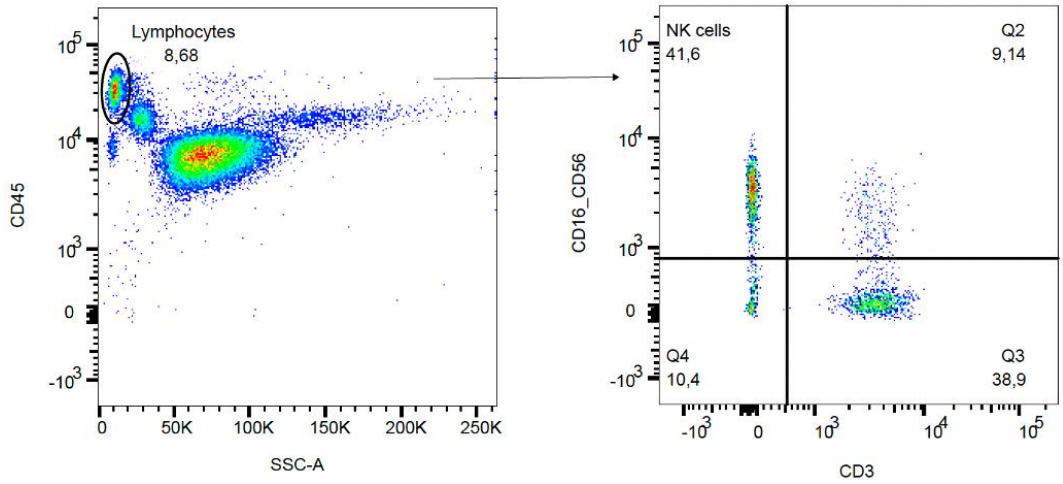

Figure S1. Gating strategy for the identification of NK lymphocytes ($CD16^{+}CD56^{+}CD3^{-}$). For explanation, see text. NK: natural killer.

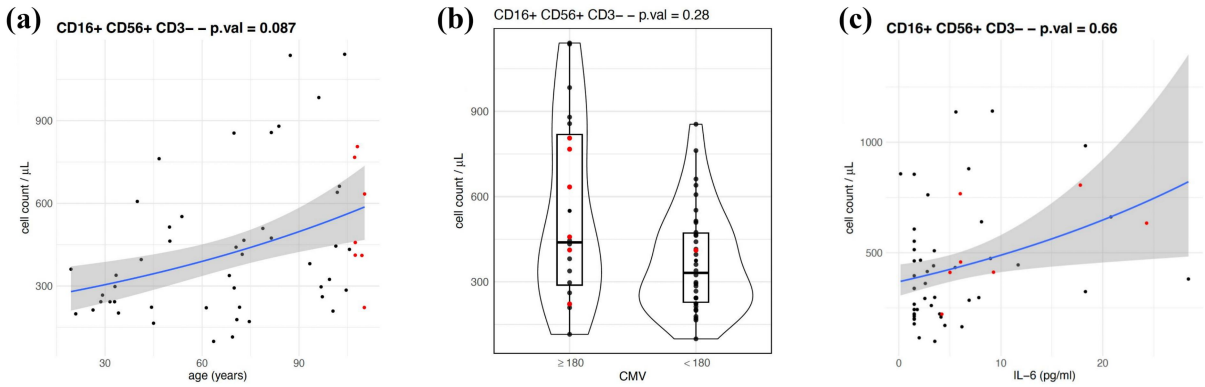

Figure S2. (a) Age-related variation in NK cell counts ($CD3^{-}CD16^{+}CD56^{+}$). Scatter plot showing the relationship between NK cell counts and age in all participants (n = 54). Each dot represents an individual healthy donor; red dots indicate the oldest centenarians (≥ 105 years), and black dots indicate younger participants. The solid blue line represents the fitted trend from the negative binomial regression model, and the shaded area denotes the 95% model-based confidence interval. Multivariable regression analysis revealed a non-significant age-related trend (p = 0.087); (b) NK cell counts ($CD3^{-}CD16^{+}CD56^{+}$) stratified by anti-CMV antibody titres. Violin plots illustrate the distribution of circulating NK cell counts in participants with anti-CMV titres < 180 and ≥ 180. Each dot represents an individual healthy donor; red dots indicate the oldest centenarians (≥ 105 years), and black dots indicate younger participants. Multivariable regression analysis showed no statistically significant association. The low anti-CMV group includes individuals with titres < 180, including CMV-seronegative subjects, whereas the high anti-CMV group includes individuals with titres ≥ 180; (c) Association between circulating IL-6 levels and NK cell counts ($CD3^{-}CD16^{+}CD56^{+}$). Scatter plot depicting the relationship between NK cell counts and IL-6 concentrations in all

participants (n = 54). Each dot represents an individual healthy donor; red dots indicate the oldest centenarians (≥ 105 years), and black dots indicate younger participants. The solid blue line represents the fitted trend from the negative binomial regression model, and the shaded area indicates the 95% confidence interval. No statistically significant association was observed. NK: natural killer; CMV: cytomegalovirus; IL-6: interleukin 6.

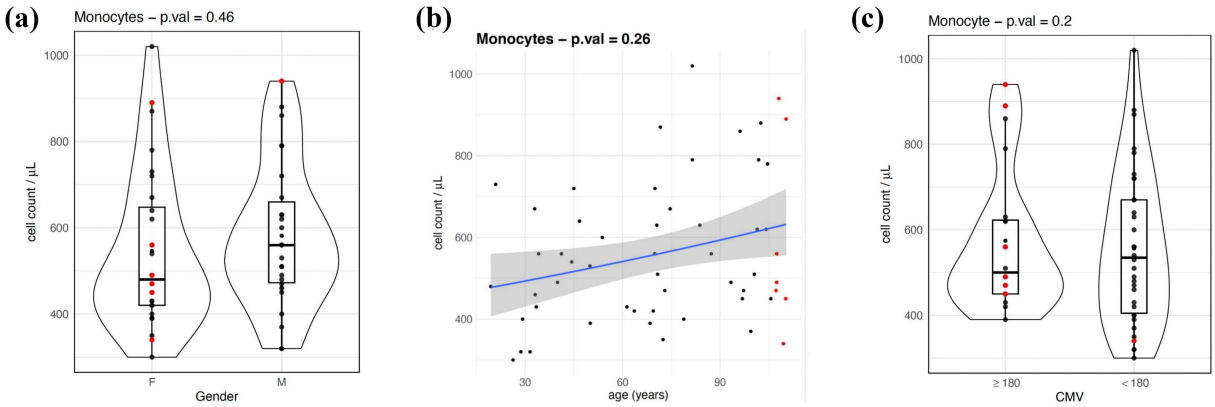

Figure S3. (a) Blood monocyte counts stratified by sex. Violin plots show the distribution of monocyte counts in women and men. Each dot represents an individual healthy donor; red dots indicate the oldest centenarians (≥ 105 years), and black dots indicate younger participants. Multivariable regression analysis revealed no statistically significant sex effect; (b) Age-related variation in blood monocyte counts. Scatter plot showing the relationship between monocyte counts and age in all participants (n = 54). Each dot represents an individual healthy donor; red dots indicate the oldest centenarians (≥ 105 years), and black dots indicate younger participants. The solid blue line represents the fitted trend from the negative binomial regression model, and the shaded area denotes the 95% confidence interval. No statistically significant association was detected; (c) Blood monocyte counts stratified by anti-CMV antibody titres. Violin plots illustrate the distribution of circulating monocyte counts in participants with anti-CMV titres < 180 and ≥ 180. Each dot represents an individual healthy donor; red dots indicate the oldest centenarians (≥ 105 years), and black dots indicate younger participants. Multivariable regression analysis showed no statistically significant association. The low anti-CMV group includes individuals with titres < 180, including CMV-seronegative subjects, whereas the high anti-CMV group includes individuals with titres ≥ 180. CMV: cytomegalovirus.