

Framingham risk score (FRS) in HIV-positive patients living in Italy: the Icona Foundation Study

Antonella d'Arminio Monforte (1), Alessandro Cozzi-Lepri (2), Andrea Antinori (3), Andrea De Luca (4), Cristina Mussini (5), Sergio Lo Caputo (6), Giovanni Cassola (7), Giampietro Pellizzer (8) Jacopo Vecchiet (9) Pietro Caramello (10) Maria Montroni (11), Antonella Castagna (12)

1- Institute of Infectious Diseases San Paolo H University fo Milan

2-Research Department of Infection & Population Health, University College London Royal Free Campus

3- Department of Infectious Diseases INMI L Spallanzani Rome

4- Institute of Infectious Diseases UCSC University Rome

5- Institute of Infectious Diseases University of Modena

6- Department of Infectious Diseases H Bagno a Ripoli (Firenze)

7- Department of Infectious Diseases H Galliera Genova

8- Department of Infectious Diseases H Vicenza

9-- Institute of Infectious Diseases University of Chieti

10- Department of Infectious Diseases Amedeo di Savoia H Torino

11- Chair of Immunology University of Ancona

12- Institute of Infectious Diseases Vita e Salute University Milan

Background: The aim was to calculate the FRS in HIV-positive patients living in Italy and to identify the factors associated with the time to develop a score >10% while on ART.

Methods: We studied patients for whom data on smoking, blood pressure, cholesterol (total, HDL) were available at ≥ 1 clinical visit. The 10-year FRS was calculated at each visit; patients with FRS>10% at baseline (defined as the date of enrolment for the analysis of patients while still off- combination antiretroviral therapy (cART) and the date of starting cART for the analysis post-cART) were excluded. The progression to moderate-high FRS (>10%) was analysed using standard survival analysis; predictors studied included gender, mode of HIV transmission, current and nadir CD4, current and max HIV-viral load (VL), duration of exposure to drug classes (PI, NNRTI, thymidine analogues) and specific antiretrovirals (abacavir, ddl and tenofovir).

Results: We studied 6,762 patients (29% females; median age 31, range:18-88); at enrolment, 6,431 (94%) had $\leq 10\%$ FRS, 1% >20%. The KM estimate of the median time to FRS>10% while naive was 4.48 years (95%CI:4.14-5.04) vs. 4.12 (95%CI:3.92-4.34) after starting cART. From fitting a Poisson analysis in patients starting cART, subjects with higher current VL (RH=0.84 per log₁₀ higher, 95% CI:0.81-0.88, p=0.0001), longer duration of exposure to abacavir (RH=0.83 per year longer, 95%CI:0.75-0.92, p=0.0005), and tenofovir (RH=0.75/year 95%CI:0.67-0.83 p=0.0001) were at reduced risk of achieving FRS>10%. Higher risk was associated with higher VL pre-cART (RH=1.11 per log₁₀, 95% CI:1.05-1.17, p=0.02) and longer exposure to thymidine analogues (RH=1.06/year, 95% CI:1.01-1.12, p=0.02). There was a tendency for a higher risk associated with longer exposure to PI (RH=1.06/year, 95% CI:0.99-1.12, p=0.06).

Conclusions: In HIV-infected patients living in Italy a low prevalence of high FRS was estimated. Further research is needed to inform clinicians about how to best use the FRS in HIV patients.