Comparison of Framinhgam versus D:A:D cardiovascular risk calculators in the estimation of cardiovascular risk in patients with HIV older than 50 years.

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Background: The estimation of cardiovascular risk is the most reasonable and cost-effective way to determine the priorities of cardiovascular prevention in asymptomatic persons and allows allocating resources according to needs. The prevention of cardiovascular disease is essential, considering that this remains the most frequent serious non-defining event of AIDS, and contributes to the mortality of patients. The estimation of cardiovascular risk in patients has been estimated from 28 to 73%, despite effective antiretroviral therapy. Although the Framingham equation has traditionally been used to estimate the 10-year risk of developing coronary artery disease, this equation may not provide an accurate estimate for patients infected with HIV, due to direct effects of HIV infection, antiretroviral therapy as well as traditional risk factors. In a study that attempted to validate the use of the Framingham equation in patients with HIV, an incidence of myocardial infarction was found to be higher than predicted in patients receiving antiretroviral therapy. In consideration of the limitations of the Framingham equation, the D: A: D group developed an equation to predict cardiovascular risk, which includes traditional cardiovascular risk factors, in addition to exposure to antiretroviral drugs that increase cardiovascular risk.

Objectives: To know the cardiovascular risk estimated by the equations of Framingham and D: A: D, in patients older than 50 years from the HIV clinic of the General Hospital of Tacuba of the ISSSTE. To know the differences that appear in the risk factors of HIV clinic patients older than 50 years with those younger than this age.

Material and Methods: Age, gender, proportion of patients with viral load less than 40 copies / mL, TCD4 + lymphocyte count were determined for all patients with chronic HIV infection under antiretroviral treatment of the HIV clinic of the Tacuba General Hospital of ISSSTE. , cholesterol levels, LDL, HDL fractions, presence of diabetes, systemic arterial hypertension, smoking, previous antiretroviral treatment, cardiovascular risk scales of Framhingam and D: A: D, and were compared between two groups of patients, the first constituted by patients with more than 50 years of age and the other with patients aged 30 to 49 years, descriptive statistics were performed with measures of central tendency and dispersion. A comparison between both groups was made, the continuous variables were compared using the Student's T test. A value of p less than 0.05 was considered significant.

Results: A total of 108 patients were included, 50 of these under 50 years and 58 over 50 years of age, with a proportion of male patients of 96 vs. 82.75% (p = 0.69) respectively, no significant difference was found in the group of patients under and over 50 in the proportion of patients with viral load below the limit of detection (<40 copies / mL) with 88% vs 93.1% (p = 0.27), the CD4 + lymphocyte count 602.8 vs 498 cel / mm3 (p = 0.14), total cholesterol levels 188.1 vs 198.9 (p = 0.43), LDL fractions 106.1 vs 108.4 mg / dL (p = 0.58) and HDL 43 vs 45 mg / dL (p = 0.78) As regards the cardiovascular risk scores, a higher score was observed in the case of the Framingham scale in patients older than 50 years with an average of 16.87% risk at 10 years versus 5.32% at those under 50 years (p <0.001) In the score of study D: A: D for cardiovascular risk at five years in the group over 50 years was 5.42% vs 2.76% (p <0.001) Figure 3

Table 1 Baseline characteristics

Baseline chracteristics	Older tha 50 years	Younger than 50 years	p
Male gender n(%)	48 (82.76%)	48 (96%)	0.69
BMI (Kg/m^2)	26.44 ± 4.82	24.19 ± 3.1	0.044
PCR ARN HIV-1 <40 copies/mL n(%)	56 (93.1%)	44 (88%)	0.27
Lymphocytes T CD4+ (cells/mm^3)	498± 243.6	602± 307.62	0.14
Total Cholesterol (mg/dL)	198.9± 78.65	188.1± 38	0.43
LDL Cholesterol (mg/dL)	108.4± 41.57	106.1± 27.64	0.58
HDL Cholesterol (mg/dL)	45± 14.69	43± 10.63	0.78
Hypertensión n(%)	6 (10.34%)	0 (0%)	0.083
Diabetes mellitus n(%)	8 (13.79%)	2 (8%)	0.0066

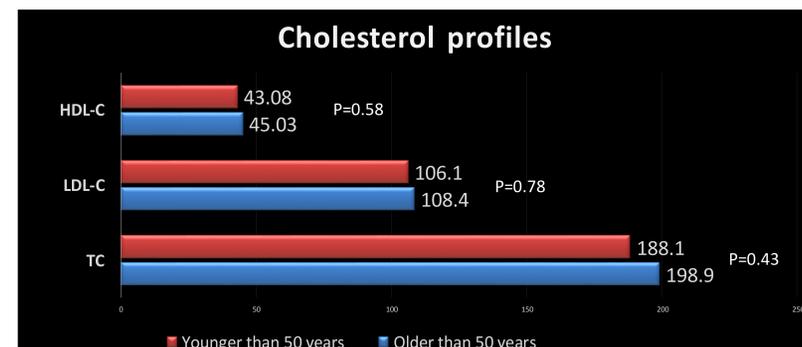Figure1.-Cholesterol fractions according to age group

Figure 2.-Traditional factors of cardiovascular risk
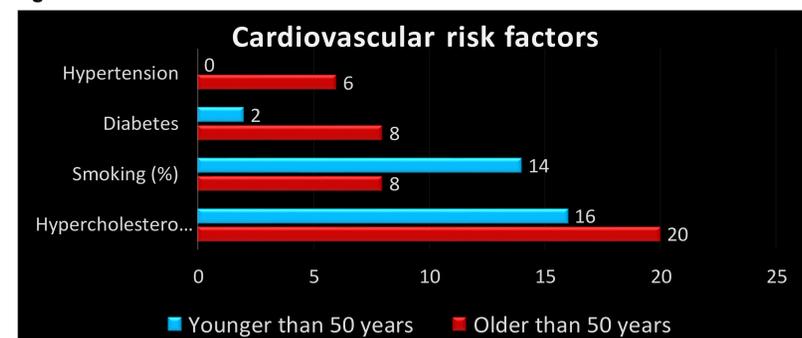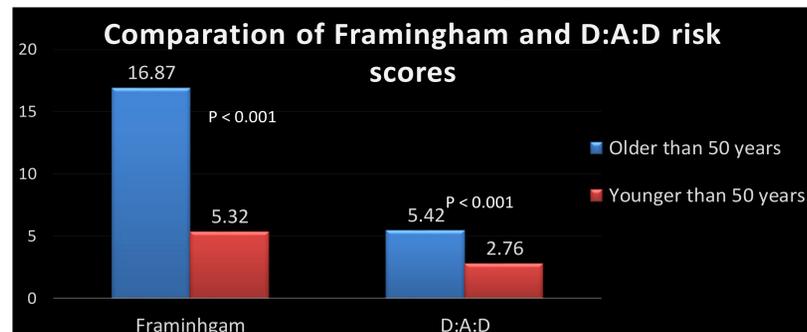

Figure 3.- Comparison of cardiovascular risk by the D: A: D and Framingham equations at 5 and 10 years respectively in each group.

Conclusions: In patients over 50 years of age, the cardiovascular risk estimated by both the Framingham equation and the D: A: D studies is significantly increased with respect to patients younger than this age. No significant differences were observed in lipid profiles in both groups, but there was a higher incidence of diabetes and hypertension in the group of patients over 50 years of age as expected. Large cohort studies with long-term follow-up are required in order to estimate which of these two models best fits Mexican patients.

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