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Oral Communication

Session/Topic: **Clinical HIV**

N. Title:

OC 60 Non-AIDS related cancer risk is not affected by cART in ICONA cohort

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Abstract:

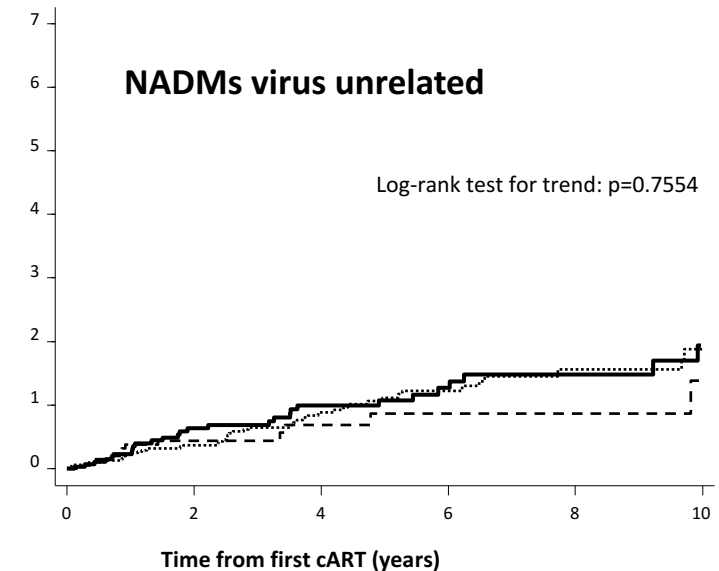
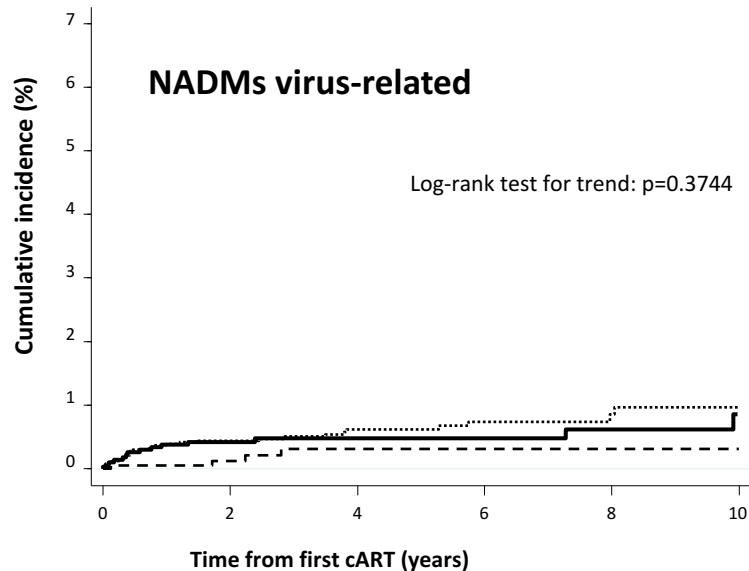
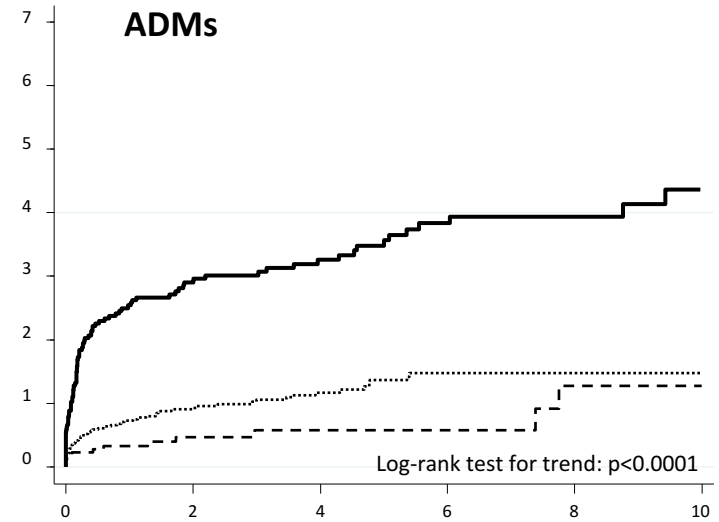
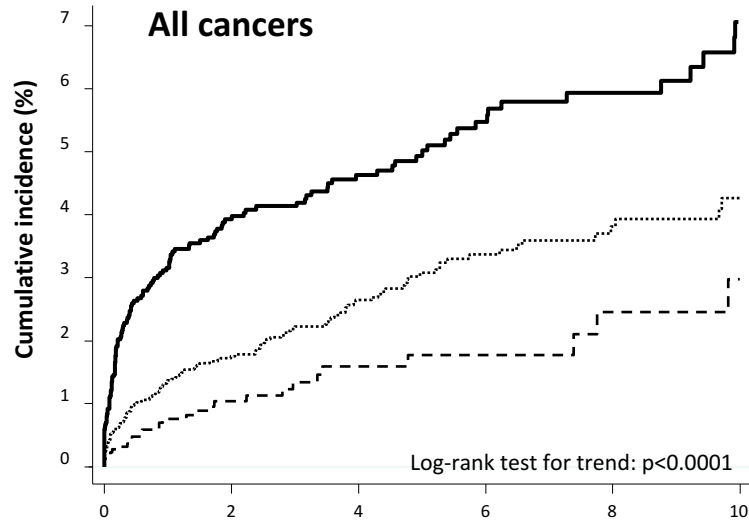
Background: Persons living with HIV/AIDS (PWHAs) show an increased incidence of malignancies than the general population, especially of virus-related cancers either AIDS-defining malignancies (ADMs), and among non-AIDS defining malignancies (NADMs) of virus-related e.g. Hodgkin's lymphoma, HCC or anal/cervical cancer. In this study, we compare the incidence of cancer in a Large Italian cohort of ART-naïve PWHAs in the last 20 years (ICONA cohort) with the general population, investigating the effect of age, CD4 and use of combined antiretroviral therapy (cART).

Methods: Person years (PY) at risk of cancer in the ICONA cohort (1996-2016) were computed from 30 days after first HIV- diagnosis to cancer diagnosis, death, drop out, last follow-up or reaching 70-year of age, eventually stratifying for cART use (time from cART initiation onward). The risk of cancer was assessed through sex- and age-standardized incidence ratios (SIR) computed by dividing the observed cases with expected ones from Italian cancer registries. Age- and sex-standardized incidence rates (ASR) were computed (entire cohort as reference population) and stratified for calendar periods. Finally, limiting the analysis to those patients on cART with no previous cancer, cumulative incidence of ADMs and NADMs was assessed according to CD4+ T-cell counts at cART initiation by log-rank test for trend.

Results: Among 11688 PWHAs (78% males) during 67,450 PYs (median follow-up 4.8 years), 415 patients (3.6%) developed 1 or more cancers (421 single diagnoses of which 222 ADMs, overall incidence of 6.2 cases/103 PYs). Rates were higher in PWHAs for ADMs and virus-related NADMs than general population, with tendency to equivalence at older age, while no difference was observed for virus-unrelated NADMs. Increased SIRs were observed for ADMs (SIR=19.8), and for virus-related NADMs (SIR=4.7), but not for virus unrelated NADMs (SIR=0.8). No effect of cART on NADMs incidence was observed, while cART strongly affected ADMs incidence over time, especially in the last period. Finally, considering 9955 patients (85.2%) on cART without a previous history of cancer (not considering from the initial cohort 1651 and 82 patients respectively), the incidence of ADMs but not NADMs (both viral related and unrelated) was significantly affected from CD4+ T-cell counts at cART initiation (log-rank test for trend, $p < 0.0001$), with 4-times higher cumulative incidence for those starting cART with 200 or less CD4+ T-cell counts (see Figure).

Conclusion: A substantial higher incidence of cancer compared to general population was observed, almost limited to ADMs and virus-related NADMs, risk that tend to overlap the general population incidence with increasing age. For not virus-related cancers the incidence was comparable to that of general population. Even though cART determines a significantly lower incidence of ADMs, for NADMs the effect of cART is negligible even regardless CD4+ T-cell count at cART initiation.

Cumulative incidence according to CD4+ T-cell counts at cART initiation for all cancers and separately for AIDS-defining (ADMs) and non-AIDS defining malignancies (NADMs) virus related or unrelated.



CD4+ T-cell counts at cART initiation: — <200 200-499 - - - 500+