Impact of antiretroviral therapy (ART), viraemia and immunosuppression on lipid levels: The D:A:D study

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Aims/Methods

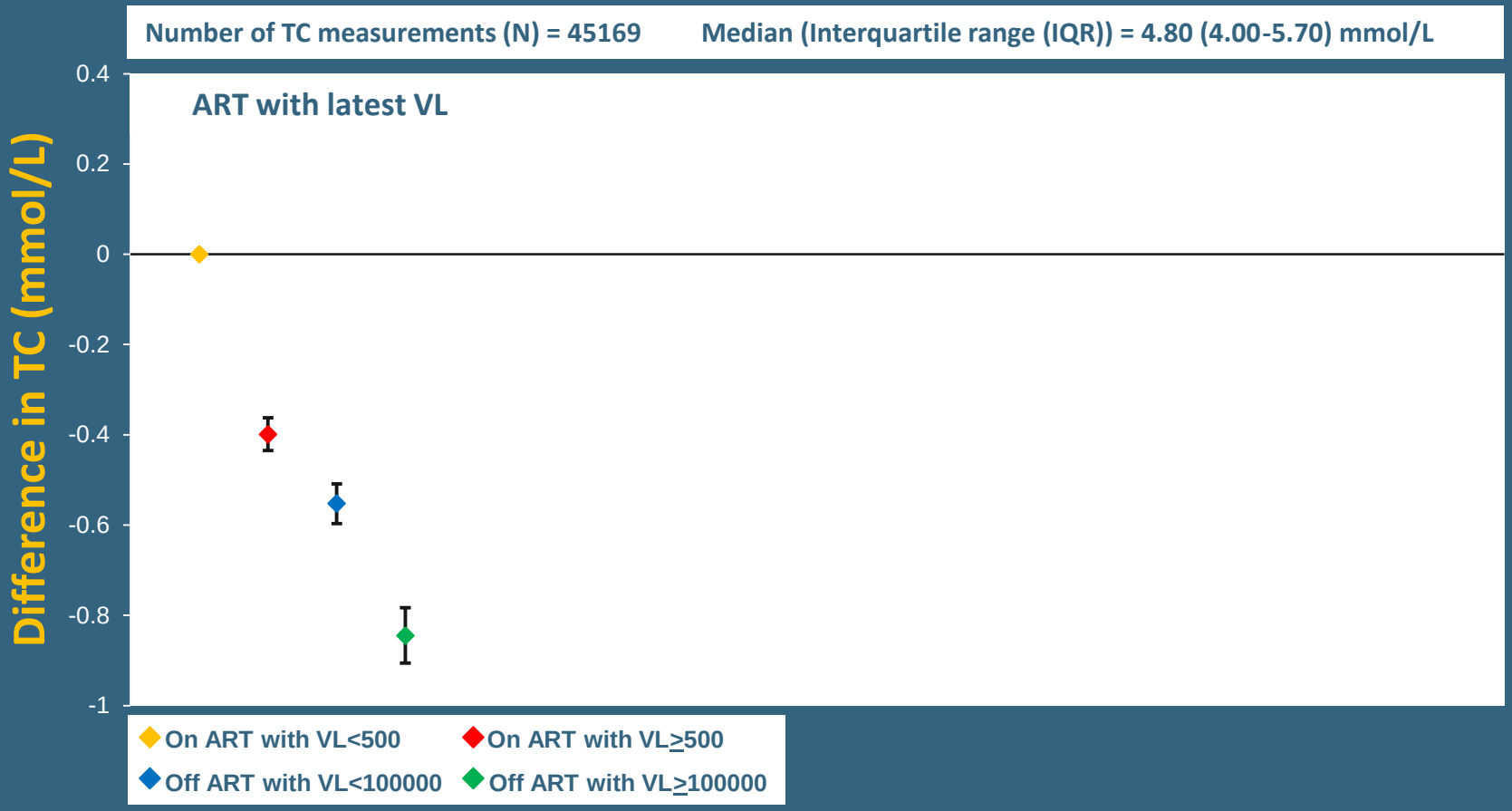
Aims of the study: To investigate the impact of ART, HIV viraemia, immunosuppression and prior AIDS diagnosis (a marker for immunosuppression) on triglyceride (TG), total cholesterol (TC) and high density lipoprotein cholesterol (HDL-C) levels

Methods

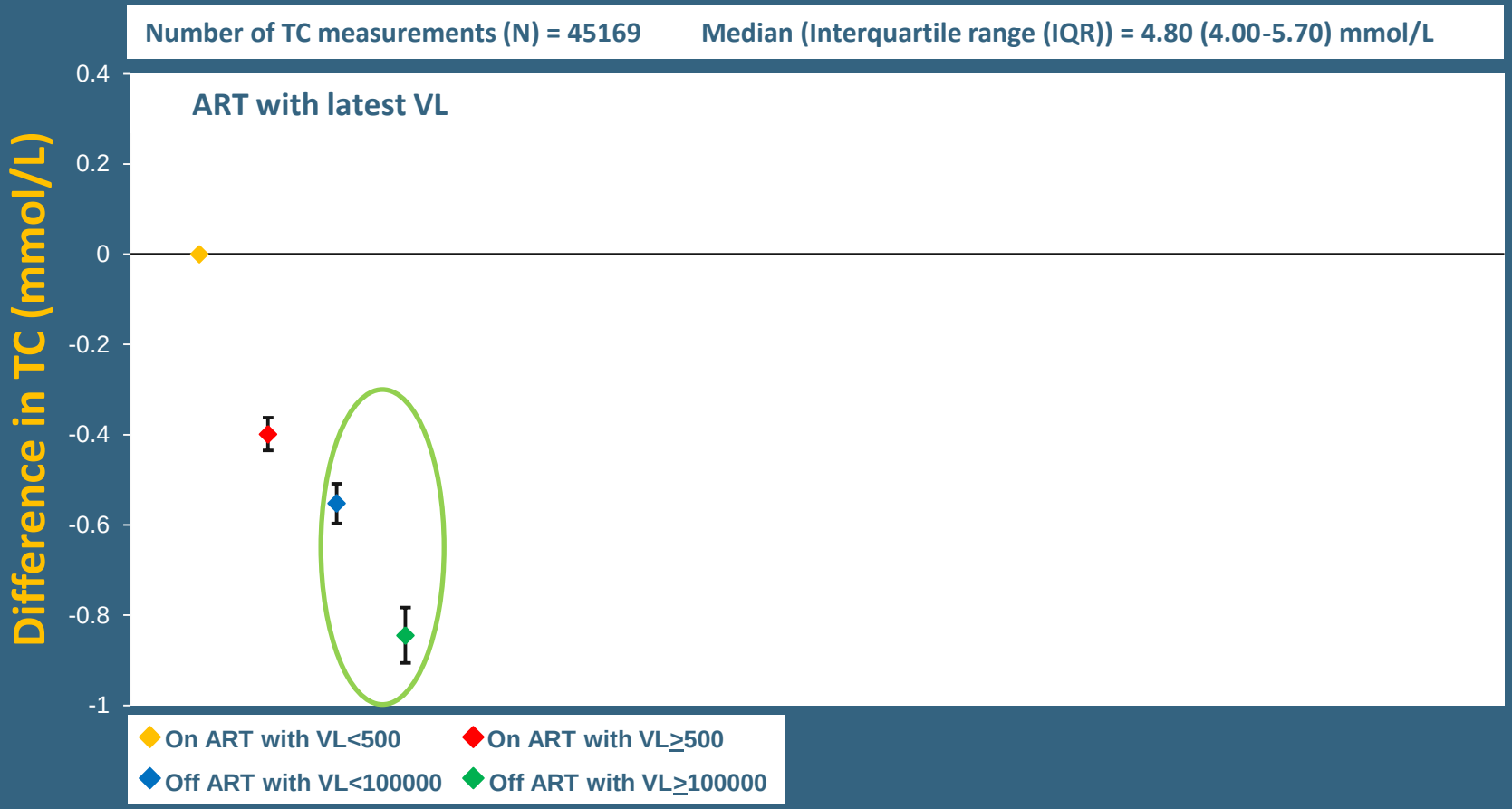
- First available TG, TC and HDL-C (mmol/L) on/after enrolment in D:A:D Study was considered, with TG being $\log_{10}$ transformed for its distribution to be Normal
- Associations between each lipid level and ART use, HIV viral load (VL), latest/nadir CD4 count and prior AIDS diagnosis were examined using linear regression
- Models included adjustment for:

Age	**Body mass index (BMI)**	**Use of lipid lowering drugs**
Gender	**Smoking**	**Hepatitis-C co-infection**
Mode of infection	**Family history of CVD**	**Cohort**
Ethnicity	**Diabetes**	**Year of D:A:D entry**

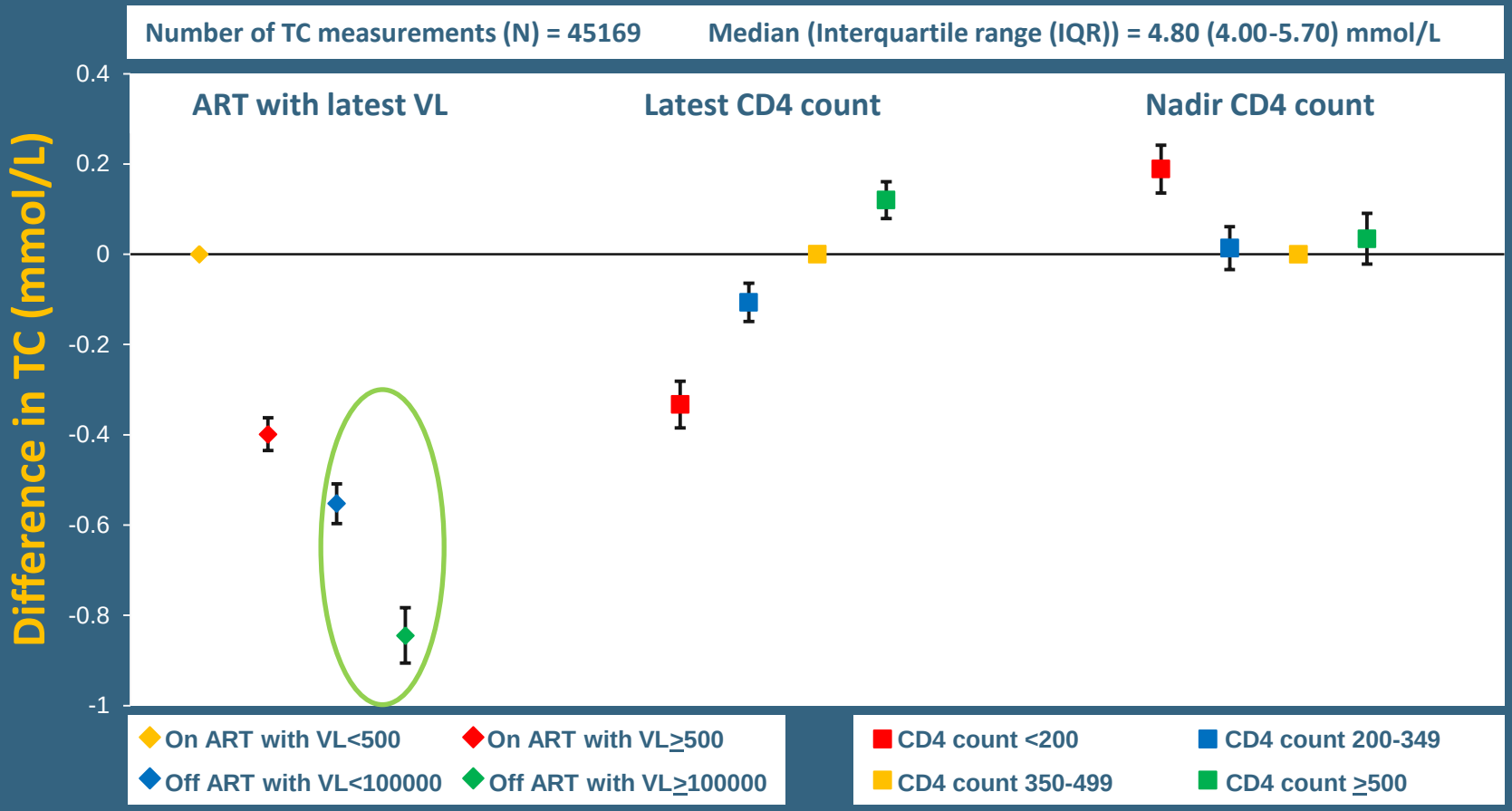
Impact of ART, viraemia and immunosuppression on TC



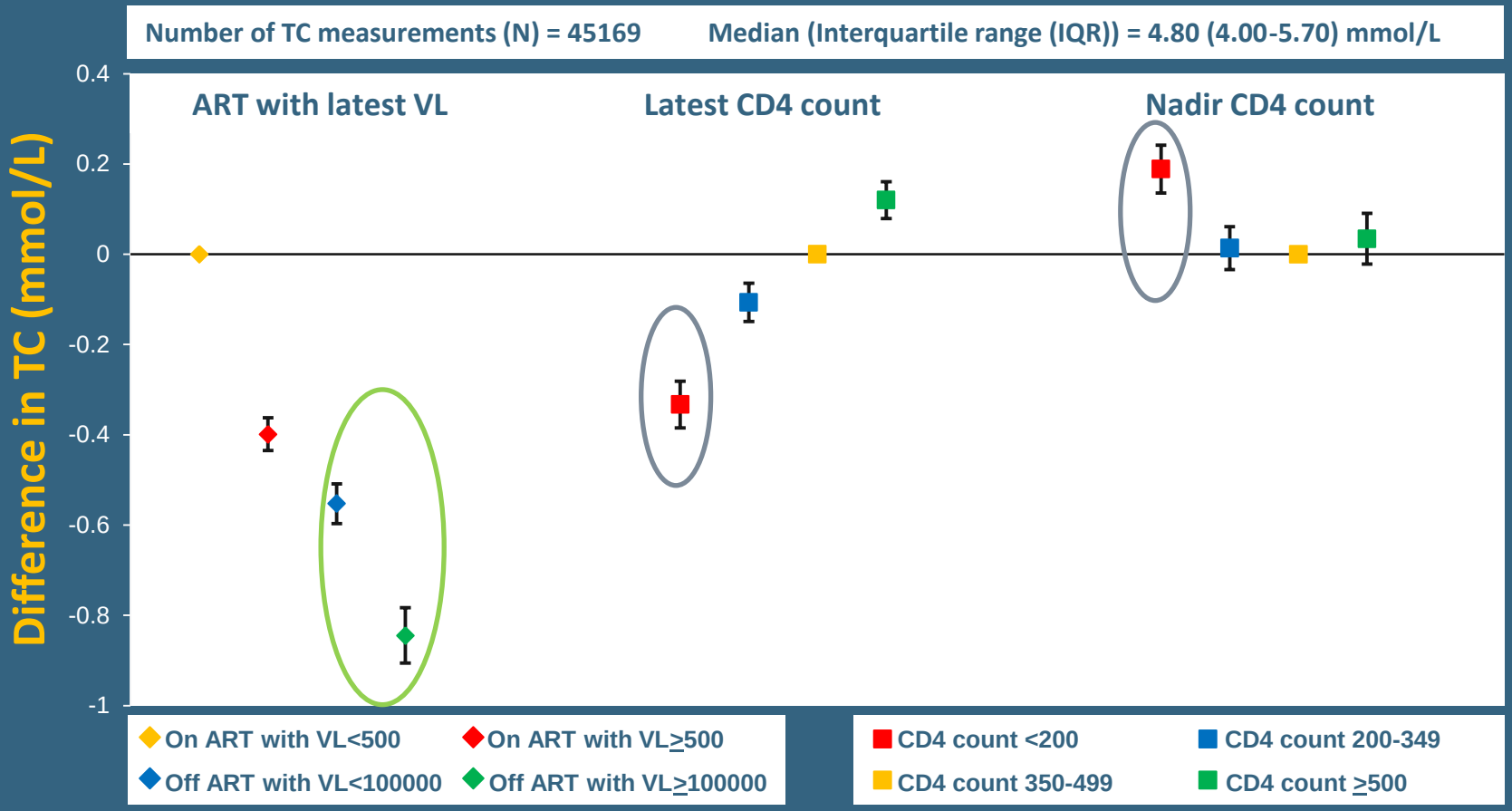
Impact of ART, viraemia and immunosuppression on TC



Impact of ART, viraemia and immunosuppression on TC



Impact of ART, viraemia and immunosuppression on TC



Impact of ART, Viraemia and immunosuppression on TG and HDL-C

- Lower TG levels (N=44 322) were seen amongst those:
  - Off ART (compared to those on ART with VL <500 copies/ml)
  - With lower current CD4 count
- Higher TG levels were seen amongst those:
  - With lower nadir CD4 count
  - With prior AIDS diagnosis
- Lower HDL-C levels (N=38 604) were seen amongst those:
  - Off ART
  - On ART with VL>500 copies/ml
  - With a lower latest CD4 count and a lower nadir CD4 count
  - With prior AIDS diagnosis

Summary and Conclusion

- Lipid levels were considerably higher for those on suppressive ART regimen
- The higher TC/TG and lower HDL-C levels seen among those with low nadir CD4 count and with a prior AIDS diagnosis (data not shown), suggests severe immunosuppression may be associated with dyslipidaemia
- Future longitudinal analyses will consider the impact of specific antiretroviral drugs and duration of ART on lipid levels