P372 Antiretroviral therapy use in ageing people with HIV: RESPOND cohort study

Olof Elvstam[1,2], O. Kirk[3,4,5], J. Vera[6,7], M. van der Valk[8,9], A. Castagna[10], F. Heyn[11], M. Cavassini[12], C. Carlander[13], R. Martin-Iguacel[14], R. Zangerle[15], J. Begovac[16], C. Martin[17], A. d'Arminio Monforte[18], C. Mussini[19], V. Vannappagari[20], D. Thorpe[21], L. Young[22], A. Vanderperre[23], E. Wallner[24], A. Rauch[3], C. Hoffmann[25,26], F. Wit[8], L. Ryom[3,4,27] on behalf of RESPOND

[1]Lund University, Department of Translational Medicine, Malmö, Sweden; [2]Department of Infectious Diseases, Växjö Hospital, Växjö, Sweden; [3]Centre of Excellence for Health, Immunity and Infections, Rigshospitalet, Copenhagen, Denmark; [4]Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark; [5]Department of Infectious Diseases, Rigshospitalet, Copenhagen, Denmark; [6]Department of Global Health and Infection, Brighton and Sussex Medical School, Brighton, United Kingdom; [7]University Hospitals Sussex NHS Foundation Trust, Worthing, United Kingdom; [8]Stichting HIV Monitoring, Amsterdam, The Netherlands; [9]Department of Infectious Diseases and Amsterdam Institute for Infection and Immunity, Amsterdam University Medical Center, University of Amsterdam, Amsterdam, The Netherlands; [10]San Raffaele Scientific Institute, Università Vita-Salute San Raffaele, Milano, Italy; 11Department I of Internal Medicine, University Hospital of Cologne, Cologne, Germany; [12]Service of Infectious Diseases, Lausanne University Hospital, University of Lausanne, Lausanne, Switzerland; 13Department of Infectious Diseases, Karolinska University Hospital, Stockholm, Sweden; [14]Department of Infectious Diseases, Odense University Hospital, Odense, Denmark; [15]Medical University of Vienna, Vienna, Austria; [16]University Hospital for Infectious Diseases, Zagreb, Croatia; [17]Infectious Diseases Department, Saint-Pierre University Hospital, Université Libre de Bruxelles (ULB), Brussels, Belgium; [18]Icona Foundation, Milan, Italy; [19]Modena HIV Cohort, Università degli Studi di Modena, Modena, Italy; [20]ViiV Healthcare, Research Triangle Park, NC, USA; [21]Gilead Sciences Europe Ltd, Uxbridge, UK; [22]Merck & Co., Inc., Rahway, NJ, USA; [23]European AIDS Treatment Group; [24]Landeskrankenhaus Graz II, Standort West, Department für Gastroenterologie, Infektiologie, Pneumologie, Graz, Austria; [25]Infektionsmedizinisches Centrum Hamburg Study Center, Hamburg, Germany; [26]II Department of Medicine, University of Schleswig-Holstein, Kiel, Germany; [27]Department of Infectious Diseases, Hvidovre University Hospital, Copenhagen, Denmark.

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Background

- While increasing numbers of people with HIV live into older age, data on antiretroviral therapy (ART) use across older age strata remain limited.
- We characterised the RESPOND cohort by age and studied distributions of characteristics, ART use, and reasons for treatment discontinuation.

Materials & methods

- Participants were followed from the earliest of 2012-01-01 or enrolment until death, loss to follow-up, or administrative censoring (2024-12-31).
- ART use was summarized at end of follow-up with assessment of temporal trends.
- Multivariable logistic regression assessed association between age group and use of tenofovir disoproxil fumarate (TDF) and two-drug regimen (2DR, any type) at end of follow-up. Reason for discontinuation of last regimen (toxicity vs. other) was analysed in uni- and multivariable analysis.

Results

- Of 44,369 participants included, 57% were ≥50, 26% ≥60, and 8% ≥70 years at end of follow-up.
- Comorbidity and polypharmacy rates increased with age (Table 1).
- Dolutegravir and bictegravir were the most commonly used anchor drugs across ages.
- TDF was more frequently used than tenofovir alafenamide (TAF) before age 50, whereas the reverse was true for older individuals (Figure). This difference remained after adjustment (Table 2).
- Two-drug regimens were more often used in older people, also after adjustment (Table 2).
- Use of abacavir (ABC) and boosters, respectively, decreased from 2012 to 2024, without clear differences between age strata and were used in 14% and 17% of people aged ≥70 years at end of follow-up.
- Age was associated with higher likelihood of treatment discontinuation due to toxicity (Table 3).

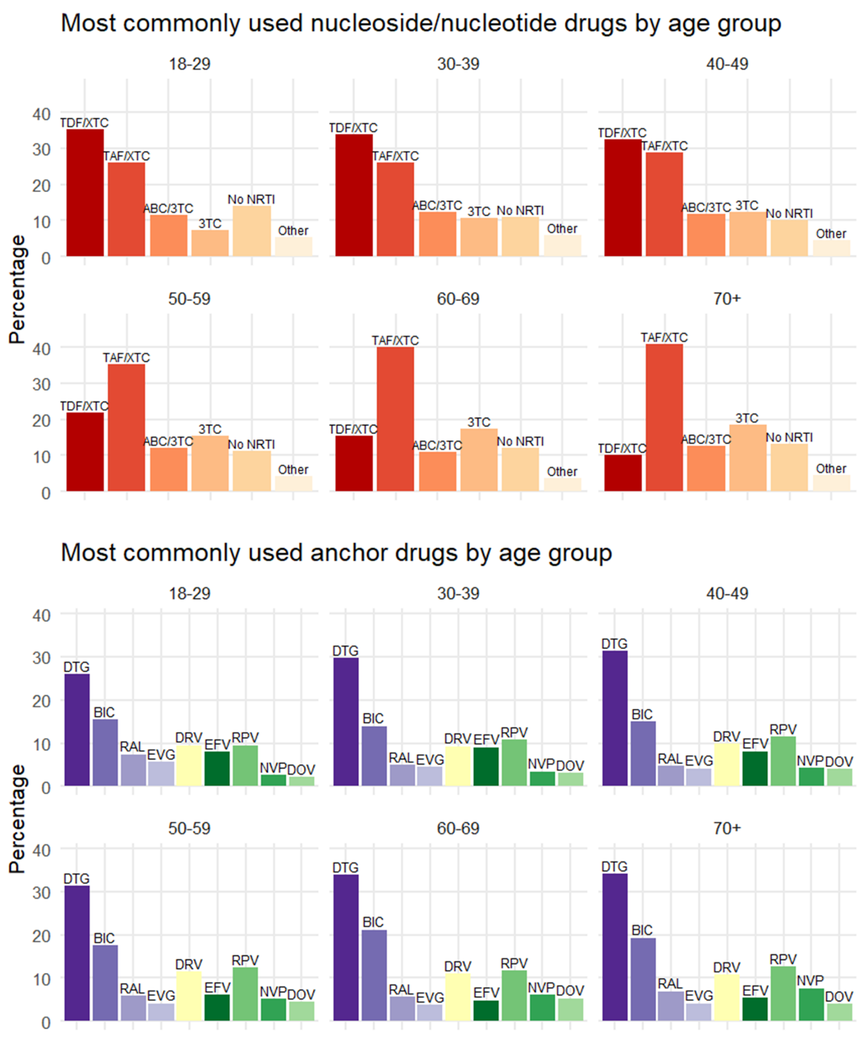

Figure. Ongoing treatment at end of follow-up across age strata.
Abbreviations: 3TC, lamivudine; ABC, abacavir; BIC, bictegravir; DRV, darunavir; DOV, doravirine; DTG, dolutegravir; EFV, efavirenz; EVG, elvitegravir; FTC, emtricitabine; NRTI, nucleoside/nucleotide reverse transcriptase inhibitor; NVP, nevirapine; RAL, raltegravir; RPV, rilpivirine; TAF, tenofovir alafenamide; TDF, tenofovir disoproxil fumarate; XTC, lamivudine/emtricitabine.

Table 2. Multivariable analysis of TDF and 2DR use across age strata.

	TDF, unadjusted	TDF, adjusted	2DR, unadjusted	2DR, adjusted
18-29 y	Ref.	Ref.	Ref.	Ref.
30-39 y	0.91 (0.81-1.03)	0.99 (0.88-1.12)	**1.65 (1.37-1.99)**	**1.59 (1.32-1.91)**
40-49 y	**0.84 (0.75-0.94)**	1.03 (0.92-1.16)	**1.89 (1.58-2.26)**	**1.72 (1.43-2.06)**
50-59 y	**0.52 (0.47-0.58)**	**0.76 (0.67-0.85)**	**2.50 (2.09-2.99)**	**2.08 (1.73-2.50)**
60-69 y	**0.35 (0.31-0.40)**	**0.60 (0.52-0.68)**	**2.89 (2.41-3.46)**	**2.20 (1.82-2.66)**
≥70 y	**0.23 (0.20-0.26)**	**0.47 (0.40-0.55)**	**3.28 (2.72-3.97)**	**2.25 (1.84-2.74)**

Adjusted models include chronic kidney disease (binary), hepatitis B virus status (binary), previous fracture (binary), comorbidity index (≥3 vs <3), and time since HIV diagnosis (continuous). Results are odds ratios with 95% confidence intervals.

Table 3. Multivariable analysis of toxicity as reason for stopping last treatment regimen.

	Unadjusted model	Adjusted model
18-29 y	Ref.	Ref.
30-39 y	1.07 (0.86-1.33)	1.07 (0.86-1.34)
40-49 y	1.18 (0.96-1.46)	1.18 (0.96-1.46)
50-59 y	**1.37 (1.11-1.69)**	**1.37 (1.11-1.69)**
60-69 y	**1.54 (1.24-1.89)**	**1.52 (1.22-1.90)**
≥70 y	**1.83 (1.47-2.28)**	**1.78 (1.42-2.23)**

Adjusted models include time since HIV diagnosis (continuous), prior virological failure (binary), sex/gender (male/female/transgender), comorbidity index (0/1/2/≥3). Results are odds ratios with 95% confidence intervals.

Table 1. Characteristics of people with HIV in different age strata.

	18-29 y 1,469 (3.3%)	30-39 y 6,399 (14.4%)	40-49 y 11,308 (25.5%)	50-59 y 13,444 (30.3%)	60-69 y 8,313 (18.7%)	≥70 y 3,436 (7.8%)
Male sex/gender	1,103 (75.1%)	4,604 (72.0%)	8,158 (72.1%)	10,017 (74.5%)	6,566 (79.0%)	2,853 (83.0%)
Comorbidities						
Hypertension[a] (last 5 years)	271 (18.5%)	1,625 (25.4%)	3,943 (34.9%)	6,839 (50.9%)	5,481 (65.9%)	2,672 (77.8%)
Diabetes[b] (last 5 years)	7 (0.5%)	76 (1.2%)	263 (2.3%)	721 (5.4%)	776 (9.3%)	498 (14.5%)
Dyslipidemia[c] (last 5 years)	571 (38.9%)	3,025 (47.3%)	6,163 (54.5%)	9,086 (67.5%)	6,323 (76.1%)	2,717 (79.1%)
Cardiovascular disease (lifetime)	1 (0.1%)	39 (0.6%)	178 (1.6%)	721 (5.4%)	947 (11.4%)	729 (21.2%)
Cancer (lifetime)	21 (1.4%)	234 (3.7%)	758 (6.7%)	1,739 (12.9%)	1,614 (19.4%)	929 (27.0%)
Fracture (lifetime)	29 (2.0%)	214 (3.3%)	589 (5.2%)	1,194 (8.9%)	1,084 (13.0%)	582 (16.9%)
Polypharmacy[d]	53 (3.6%)	310 (4.8%)	995 (8.8%)	1,939 (14.4%)	2,225 (26.8%)	1,313 (38.2%)

[a]n=3593 missing; [b]n=2241 missing; [c]n=627 missing; [d]Defined as ≥5 concomitant medications (excluding ART).

Conclusion

This study, including high numbers of participants ≥60 and ≥70 years, provides a detailed overview of characteristics and ART use across ages.

- Whilst use of TDF decreased, TAF and 2DR use increased with higher age.
- To support healthy ageing, ART optimization should consider age-related comorbidities, polypharmacy, drug–drug interactions, treatment tolerability, and individual preferences.
- Continued evaluation of ABC and booster use, alongside person-centered strategies, may help improve long-term care and quality of life.

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The RESPOND Study Group: https://chip.dk/research-areas/cohort-studies/studies-and-projects/respond/study-group/
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LUND UNIVERSITY ✉ olof.elvstam@med.lu.se