Utilisation of the Perinatal Virtual Clinic for management of virological failure

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Background

Multidisciplinary virtual clinics aim to support decision making for complex case management for people living with HIV. This study reviewed referrals for virological failure (VF) and recommendations made by the monthly Perinatal Virtual Clinic (PVC). This receives UK and international referrals through the Penta network and is supported by both paediatric and adult healthcare providers.

Methods

A retrospective review of referrals (0–21 years) to the PVC for VF (HIV viral load (VL) >200 c/ml), January 2017 to October 2023. Demographic, antiretroviral therapy (ART), immunological and virological data are described with follow up outcomes for cases rediscussed.

Results

150 of 557 referrals received over 7 years (27%) were for VF:

- Median age 12 (IQR 6-15) years.
- 120/150 (80%) from high-income countries (HIC), 87/150 (58%) UK and 30/150 (20%) from low/middle-income countries (LMIC); most frequently Malawi (5) and Uganda (4).
- Median VL: 9116 c/ml (IQR 1758-78850)
- Median CD4 count: 506 cells/μl (IQR 261-840)

ART regimens

- 20 (13%) were receiving non-nucleoside reverse transcriptase inhibitor (NNRTI), 53 (35%) boosted protease inhibitor (PI), 48 (32%) integrase (INSTI), 13 (9%) INSTI+PI based regimens and 16 (11%) off ART/other.
- Prior ART regimens documented (n=142): 1 (53 [37%]), 2 (42 [30%]) and ≥3 (47 [33%]).

Resistance data

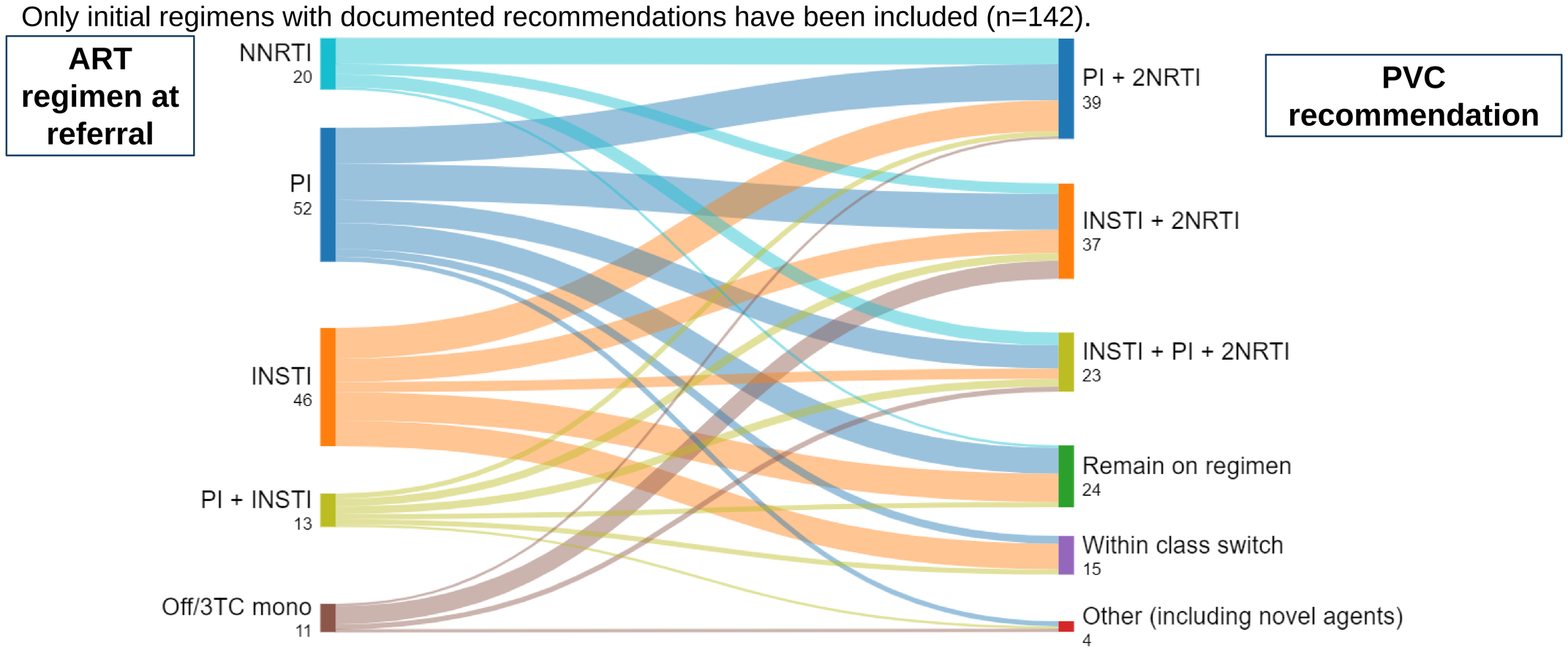
- 129 (86%) had resistance sequences available; 106 (82%) HIC, 23 (70%) LMIC.
- Cumulative resistance by ART classes: single (40 [31%]), dual (41 [31%]), triple (17 [13%]), quadruple (2 [2%]).
- Drug resistance by class (major mutations only): NRTI 79 (61%), NNRTI 73 (57%), INSTI 16 (12%), PI 14 (11%).

Recommendations and outcomes

- ART recommendations: switch to PI 26 (17%), switch to INSTI 28 (19%), switch to INSTI+PI 20 (13%), simplification from PI+INSTI 5 (3%), exploration of novel agents 4 (3%), no switch 40 (27%) and within class switch 26 (17%),
- Follow-up discussions were requested for 48 (31%) with 17 of these (35%) having achieved viral suppression.

Figure 1. Sankey diagram showing initial treatment regimens and subsequent recommendations.

Only initial regimens with documented recommendations have been included (n=142).



Conclusions

The management of virological failure in paediatric HIV is increasingly complex. In HIC, case numbers and thus healthcare experiences are falling. In LMIC, although resistance testing is emerging, access to robust agents in second-line failure is relatively limited. The PVC supports decision making, maintenance of profession expertise and medical education.

Additional information

PVC referrals: anonymised cases can be submitted by completing the referral slide decks Chiva | Perinatal Virtual Clinic and emailing caroline.foster5@nhs.net

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