

# Drug-Resistant Genotyping to Guide Selection of Etravirine, Darunavir and Raltegravir in Salvage Therapy for Multi-Drug-Resistant Cases Improves Outcomes

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## BACKGROUND

Since the new antiretrovirals, etravirine (ETV), darunavir (DRV) and raltegravir (RAL), were approved initially for salvage and later for first-line treatment, we sought to clarify the effects of drug-resistant genotyping as a guide in selecting new antiretrovirals for salvage therapy in multi-drug-resistant (MDR) cases.

## METHODS

### Subjects:

HIV/AIDS cases in 377 HIV/AIDS clinics.

### Questionnaires:

1. Patient profiles ( gender, age, risk group, year of starting first ART)
2. Clinical data ( CD4<sup>+</sup> cell counts, HIV-VL [ baseline and after switching to ART with "new ARV" ] )
3. ARV histories (number, duration, reason for switching to ART with "new ARV")
4. Whether or not genotyping was used to guide selection of "new ARV"

### Classification of ARV:

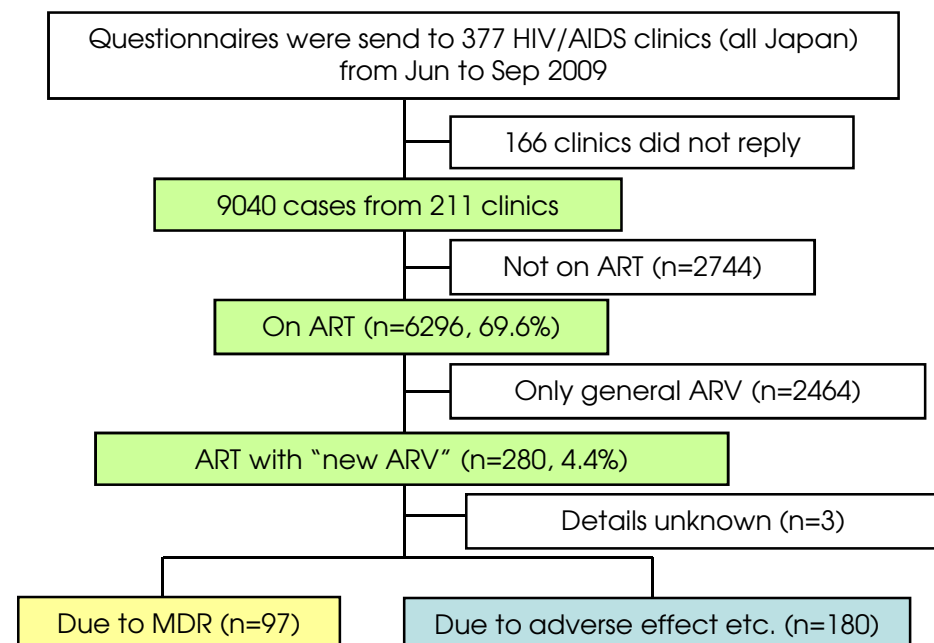
"New ARV" indicates darunavir, raltegravir, etravirine, enfuvirtide, tipranavir, maraviroc.

"General ARV" indicates zidovudine, stavudine, lamivudine, emtricitabine, didanosine, abacavir, tenofovir, nevirapine, efavirenz, delavirdine, indinavir, saquinavir, ritonavir, nelfinavir, fosamprenavir, lopinavir, atazanavir.

### Statistical analysis :

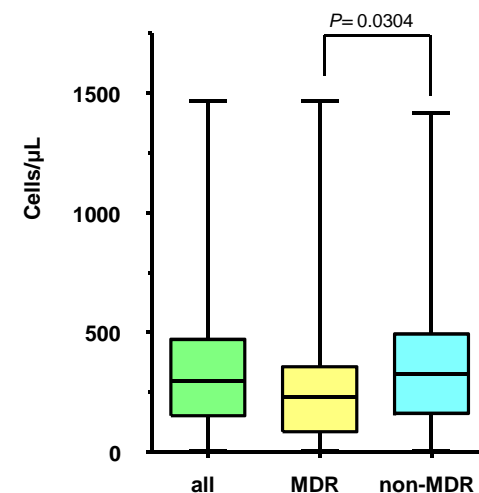
Data were analyzed by Graph Pad Prism 5 program.

## SUMMARY OF STUDY SUBJECTS

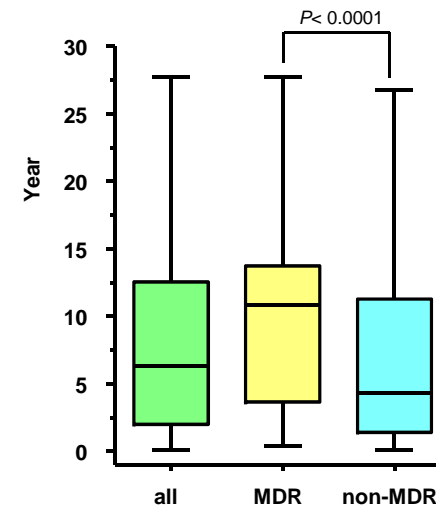


## RESULTS

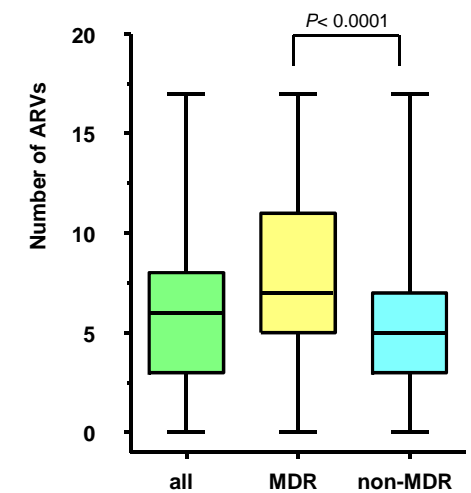
1. CD4<sup>+</sup> counts in MDR cases were significantly lower than that of non-MDR cases at the baseline



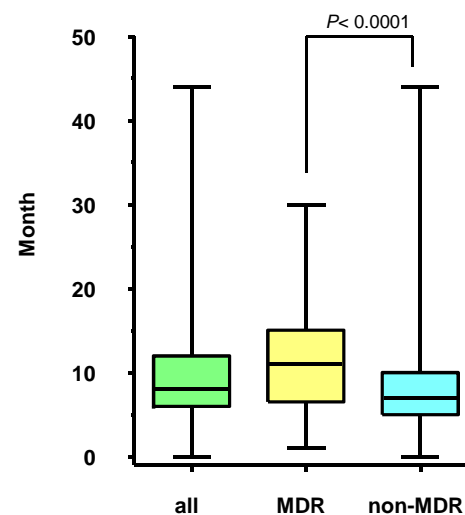
2. MDR cases had significantly longer history of ART



3. MDR cases had exposed more extensively to ARVs previously

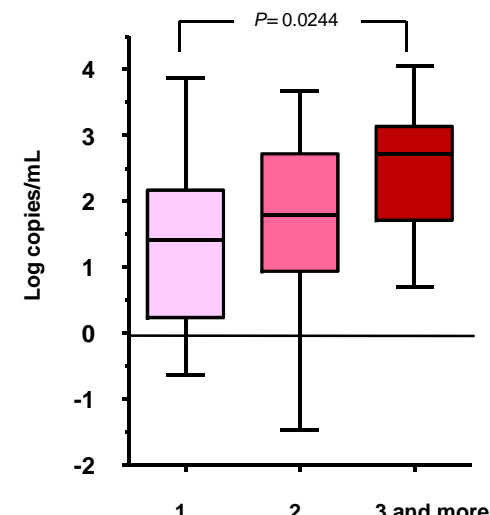


4. Installation of "new ARV" were earlier in MDR cases



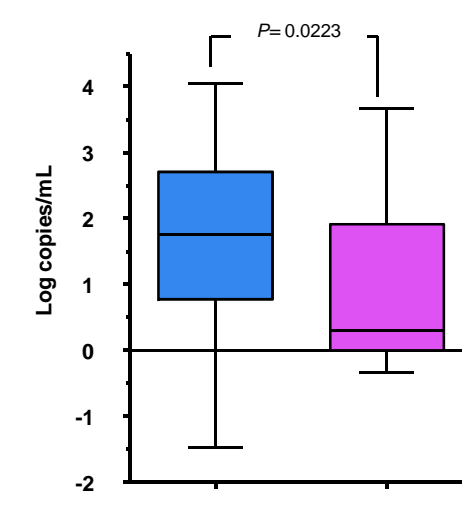
\*1-4, were analyzed by Mann-Whitney test between "MDR" and "non-MDR"

5. In MDR cases (n=97), larger reductions of VL were observed when more than 3 "new ARV" were added to ART



Data were analyzed by Kruskal-Wallis test

6. In MDR cases (n=97), larger reductions of VL were established by genotypic guides



Data were analyzed by Mann-Whitney test

## CONCLUSIONS

1. MDR cases were found to have longer and extensive exposures to antiretrovirals, because potential of "general ARV" were not sufficient to control viral replication.
2. "New ARV" was effective in controlling MDR cases, especially when more than 3 "new ARV" were used.
3. Genotypic guides were effective in selecting appropriate "new ARV".