

Supplementary materials

Treatment naïve patients and treatment naïve patients with high viral load (DTG Vs. RAL)

| Line 1 | Line 2 | Line 3 | Line 4 |
|----------------|--|---|--------------------|
| Backbone + DTG | Tolerability failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: Backbone + PI 3 rd line + r | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: PI 3 rd line + r + ETR | Salvage 2, 3 |
| | Virologic failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: ETR + DRV+r + MVC (50%) or Backbone + PI 3 rd line + r (50%) | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: ETR + DRV+r + MVC | Salvage 2, 3 |
| Backbone + RAL | Tolerability failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: Backbone + PI 3 rd line + r | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: PI 3 rd line + r + ETR | Salvage 2, 3 |
| | Virologic failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: ETR + DRV+r + MVC (50%) or Backbone + PI 3 rd line + r (50%) | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: ETR + DRV+r + MVC | Salvage 2, 3 |
| | Virologic failure – 184V: Backbone + PI 2 nd line + r | Virologic failure – no additional resistance: ETR + DRV+r + MVC | Salvage 2, 3 |
| | Virologic failure – 184V, INSTI resistance: Backbone + PI 2 nd line + r | Virologic failure – no additional resistance: ETR + DRV+r + MVC (50%) or ETR + DRV+r + DTG (50%) | Salvage 2, 3 |

DTG: Dolutegravir; EFV: Efavirenz; TDF: Tenofovir Disoproxil Fumarate; FTC: Emtricitabine;
 DRV+r: Darunavir+Ritonavir; ETR: Etravirine; MVC: Maraviroc; RAL: Raltegravir; PI 2nd line: 2nd
 line protease inhibitor (50% DRV+r; 50% ATV+r); ATV/r: Atazanavir+ritonavir; PI 3rd line: 3rd line
 protease inhibitor (50% DRV+r; 50% LPV/r); LPV/r: Lopinavir/ritonavir

Treatment naïve patients and treatment naïve patients with high viral load (backbone + DTG Vs. backbone + DRV+r)

| Line 1 | Line 2 | Line 3 | Line 4 |
|---|---|---|--------------------|
| Backbone + DTG | Tolerability failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: Backbone + PI 3 rd line + r | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: ETR + PI 3 rd line + r | Salvage 2, 3 |
| | Virologic failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: ETR + DRV+r + MVC (50%) or Backbone + PI 3 rd line + r (50%) | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: ETR + DRV+r + MVC | Salvage 2, 3 |
| Backbone + DRV+r | Tolerability failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + RAL | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: PI 3 rd line + r + ETR + TDF | Salvage 2, 3 |
| | Virologic failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: RAL + RPV + TDF | Salvage 1, 2, 3 |
| | | Virologic failure – 184V: RAL + ETR + TDF | Salvage 2, 3 |
| | | Virologic failure – 65R, 184V, 103V: RAL + ETR + MVC | Salvage 2, 3 |
| | Virologic failure – 184V: DRV/r + RAL + TDF | Virologic failure – no additional resistance: DRV+r + ETR + TDF | Salvage 2, 3 |
| DTG: Dolutegravir; EFV: Efavirenz; TDF: Tenofovir Disoproxil Fumarate; FTC: Emtricitabine; DRV+r: Darunavir+Ritonavir; ETR: Etravirine; MVC: Maraviroc; RAL: Raltegravir; RPV: Rilpivirine; PI 3 rd line: 3 rd line protease inhibitor (50% DRV+r; 50% LPV/r); LPV/r: Lopinavir/ritonavir | | | |

Treatment Naïve patients (backbone + DTG Vs. TDF/FTC/EFV)

| Line 1 | Line 2 | Line 3 | Line 4 | |
|--|---|---|---|--------------------|
| Backbone + DTG | Tolerability failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 | |
| | | Virologic failure – 184V: Backbone + PI 3 rd line + r | Salvage 2, 3 | |
| | | Virologic failure – 65R, 184V, 103V: ETR + PI 3 rd line + r | Salvage 2, 3 | |
| | Virologic failure - no resistance: EFV/TDF/FTC | Virologic failure – no resistance: Backbone + PI 3 rd line + r | Salvage 1, 2, 3 | |
| | | Virologic failure – 184V: ETR + DRV+r + MVC (50%) or Backbone + PI 3 rd line + r (50%) | Salvage 2, 3 | |
| | | Virologic failure – 65R, 184V, 103V: ETR + DRV+r + MVC | Salvage 2, 3 | |
| | EFV/TDF/FTC | Tolerability failure - no resistance: Backbone + NVP | Virologic failure – no resistance: Backbone + RAL | Salvage 1, 2, 3 |
| | | | Virologic failure – 184V: Backbone + PI 3 rd line + r | Salvage 2, 3 |
| | | | Virologic failure – 65R, 184V, 103V: PI 3 rd line + r + RAL | Salvage 2, 3 |
| Virologic failure - no resistance: Backbone + PI 2 nd line + r | | Virologic failure – no resistance: Backbone + RAL | Salvage 1, 2, 3 | |
| | | Virologic failure – 184V: RAL + DRV+r + TDF (50%) or ETR + DRV+r + TDF (50%) | Salvage 2, 3 | |
| | | Virologic failure – 65R, 184V, 103V: PI 3 rd line + r + RAL | Salvage 2, 3 | |
| Virologic failure – 184V: Backbone + PI 2 nd line + r | | Virologic failure – no additional resistance: PI 3 rd line + r + ETR + TDF | Salvage 2, 3 | |
| Virologic failure – 65R, 184V, 103V: PI 2 nd line + r + RAL (50%) or PI 2 nd line + r + ETR (50%) | | Virologic failure – no additional resistance: ETR + DRV+r + MVC | Salvage 2, 3 | |

DTG: Dolutegravir; EFV: Efavirenz; NVP: Nevirapine; TDF: Tenofovir Disoproxil Fumarate; FTC: Emtricitabine; DRV+r: Darunavir+Ritonavir; ETR: Etravirine; MVC: Maraviroc; RAL: Raltegravir; RPV: Rilpivirine; PI 2nd line: 2nd line protease inhibitor (50% DRV+r; 50% ATV+r); ATV/r: Atazanavir+ritonavir; PI 3rd line: 3rd line protease inhibitor (50% DRV+r; 50% LPV/r); LPV/r: Lopinavir/ritonavir.

Treatment experienced patients (DTG Vs. RAL)

| Line 1 | Line 2 | Line 3 |
|------------|--|--------------|
| OBT1 + DTG | Virologic failure – no additional resistance: OBT2 + DTG | Salvage 2, 3 |
| OBT1 + RAL | Virologic failure – no additional resistance: OBT2 + RAL (no resistance) | Salvage 2, 3 |
| | Virologic failure –additional INSTI resistance: Salvage therapy | Salvage 3 |

OBT1: optimized background therapy 1 (weighted mean of: [(TDF + DRV+r)*0.31] + [(TDF + LPV/r)*0.19] + [(ETR + DRV+r)*0.16] + [(TDF + ATV+r)*0.17] + (LPV/r*0.17); OBT2: optimized background therapy 2 (weighted mean of: [(TDF + PI 2nd line)*0.36] + [(TDF + PI 2nd line + EFV)*0.31] + [(TDF + PI 2nd line + MVC)*0.22] + [(TDF + PI 2nd line + EFV + MVC)*0.11];
Salvage: TDF/FTC+ETR+DRV+r+MVC
TDF: Tenofovir Disoproxil Fumarate; DRV+r: Darunavir+Ritonavir; LPV/r: Lopinavir/ritonavir; ETR: Etravirine; ATV+r: Atazanavir+ritonavir; EFV: Efavirenz; MVC: Maraviroc; DTG: Dolutegravir; RAL: Raltegravir; PI 2nd line: 2nd line protease inhibitor (50% DRV+r; 50% ATV+r).
OBT1 therapies were derived from the SAILING study, considering the antiviral therapies selected by Key Opinion Leaders and using the same rate of use, proportioned to 100%.
OBT2 therapies were selected by Key Opinion Leaders.
Salvage therapy was selected by Key Opinion Leaders.

Effectiveness of treatments subsequent to first line therapies in naïve patients

| Line of therapy | Switch reason | Effectiveness value | Source |
|-----------------|--|---------------------|------------------------|
| Second line | Tolerability | 84.0% | ARTEMIS |
| Second line | Virologic failure with no resistance | 84.0% | ARTEMIS |
| Second line | Virologic failure with 184V resistance | 77.6% | ARTEMIS / TITAN / ODIN |
| Second line | Virologic failure with 184V and INSTI resistance | 71.3% | TITAN / ODIN |
| Third line | Virologic failure with no resistance | 71.0% | BENCHMRK |
| Third line | Virologic failure with any resistance | 60.6% | BENCHMRK |
| Salvage 1 | Any | 51.0% | MOTIVATE, BENCHMRK |

| | | | |
|-----------|-----|-------|--------------------|
| Salvage 2 | Any | 10.0% | MOTIVATE, BENCHMRK |
| Salvage 3 | Any | 7.0% | MOTIVATE, BENCHMRK |

Effectiveness of treatments subsequent to first line therapies in experienced patients

| Line of therapy | Switch reason | Effectiveness value | Source |
|------------------------|--|----------------------------|--------------------|
| Second line | Virologic failure with no additional resistance | 60.6% | BENCHMRK |
| Second line | Virologic failure with additional INSTI resistance | 50.8% | BENCHMRK |
| Salvage 1 | Any | 51.0% | MOTIVATE, BENCHMRK |
| Salvage 2 | Any | 10.0% | MOTIVATE, BENCHMRK |
| Salvage 3 | Any | 7.0% | MOTIVATE, BENCHMRK |