GRADE Table: Strategies for optimizing HIV monitoring among adults, children and pregnant women living with HIV receiving antiretroviral therapy

Quality assessment							Summary of findings		Effect			
Question 1.2: Routine CD4 count monitoring versus routine viral load monitoring for adults living with HIV receiving HAART												
Number of studies	**Design**	**Limitations**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other considerations**	**No. of patients CD4**	**No. of patients viral load**	**Relative (95% CI)**	**Absolute**	**Quality**	**Importance**
Mortality												
3	RCT	Serious limitations (1)	No serious inconsistency	No serious indirectness	No serious imprecision	none	Not available	Not available	Not available	Not available	Moderate-high	Critical
New AIDS-defining illness												
2	RCT	Serious limitations (1)	No serious inconsistency	No serious indirectness	No serious imprecision	none	Not available	Not available	Not available	Not available	Moderate	Critical
Mortality (observational)												
1	Observational	Serious limitations (2)	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	Not available	Not available	0.58 (0.50-0.66)	Not available	Low	Important
Clinical monitoring versus routine CD4 count + clinical monitoring							**CD4 + clinical monitoring**	**Clinical monitoring**				
Switch rates												
1	RCT	No serious limitations	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	216/957 (23%)	173/939 (18%)	0.75 (0.60-0.96)	Not available	Moderate	Critical
Viral suppression (<400 copies/ml) at 5 years												
1	RCT	No serious limitations	No serious inconsistency (4)	No serious indirectness	Serious imprecision (3)	none	624/737 (85%)	565/722 (78%)	0.66 (0.50-0.87)	Not available	Moderate	Critical
Viral failure (two consecutive viral loads >500 copies/ml after 90 days)												
1	RCT	No serious limitations	No serious inconsistency (4)	No serious indirectness (5)	Serious imprecision (3)	none	26/346 (8%)	19/352 (5%)	Not available	Not available	Moderate	Critical
Severe morbidity and mortality												
2	RCT	No serious limitations	Serious inconsistency (6)	No serious indirectness	No serious imprecision	none	414/2027 (20%)	531/2033 (26%)	Not available	Not available	Moderate	Critical
Routine laboratory (viral load + CD4) monitoring versus clinical monitoring							**No. of patients routine laboratory monitoring**	**No. of patients clinical monitoring**				
Mortality at 2 years												
1	RCT	No serious limitations	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	32/221 (14%)	44/238 (18%)	1.31 (0.83-2.06)	Not available	Moderate	Critical
Viral suppression (<40 copies/ml) at month 24												
1	RCT	No serious limitations	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	115/221 (52%)	111/238 (47%)	0.81 (0.56-1.16)	Not available	Moderate	Critical
Mean CD4 cell count increase at 24 months							**Mean CD4 cells/mm^3 (lab)**	**Mean CD4 cells/mm^3 (clin)**				
1	RCT	No serious limitations	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	206	175	–31 (–63-2.0)	Not available	Moderate	Critical
Question 1.3: Higher versus lower viral load threshold for switching HAART regimens												

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New CDC Grade 3 or 4 adverse event among children							**No. of patients Lower viral load**	**No. of patients Higher viral load**			
1	RCT	No serious limitations	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	30/125 (24%)	30/121 (25%)	1.05 (0.63-1.73)	8 more per 1000	Moderate	Critical
New serious adverse event among children												
1	RCT	No serious limitations	No serious inconsistency	No serious indirectness	Serious imprecision (3)	none	19/125 (15%)	29/121 (16%)	Not available	9 more per 1000		
New serious adverse event among children (observational)												
1	Observational/secondary modelling analysis	Serious limitations (4)	No serious inconsistency	No serious indirectness	Serious imprecision (3)	Secondary analysis of observational trial (6)	67	67	Not available	Not available	Low	Critical

(1) Only Jourdain 2011 reported double-blinding, but did not describe the blinding procedure. In addition, the Jourdain methods have not yet been fully reported, so we downgraded for this.
(2) Keiser 2011 compares the results from three countries in an ecological study; one uses routine viral load monitoring (South Africa), and two do not (Zambia and Malawi).
(3) The results are from one trial only, and therefore the results may be imprecise.
(4) Although Mermin (2011) and Kityo (2012) report viral failure and suppression using different definitions, these findings are consistent with one another.
(5) Although Kityo (unpublished) did not include morbidity or mortality outcomes, given the importance of viral failure in clinical management, we did not downgrade for this.
(6) The study used models of using different viral load cutoffs in a secondary analysis of an observational trial.

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