Low Feasibility Rate of Self Testing with a Finger-Stick Whole Blood Test

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974

Background

- Self HIV testing would contribute measurably to public health by helping more infected individuals become aware of their HIV status and therefore reducing HIV transmission
- In 2012, the FDA approved the OraQuick In-Home test with oral (saliva) swab [1]
- INSTI HIV1/HIV2®, a finger-stick whole blood test, is used for years by healthcare professionals. This test is more sensitive rather than OraQuick and provides a test result in 5 minutes [2]
- Finger-stick whole blood test could be an alternative to oral swab
- Little is known about feasibility of self-testing with finger-stick whole blood tests

Methods

- Prospective monocentric study, September 2013
- Eligibility requirements: > 18 years, HIV patient, without mental or physical handicap
- After agreement, patients performed self testing with INSTI HIV1/HIV2® with a detailed notice without outside help
- Demographic characteristics, viral load and CD4 data were collected. Time to perform test, difficulties were measured by an observer and questionnaires were completed
- **Definition :** success self testing = patient performed all steps alone with a correct interpretation of the results (positive)

Objective

- **Evaluate feasibility of self testing with finger-stick test (INSTI HIV1/HIV2®)**

Results

- 40 patients included
- **Demographic characteristics**
  mean age = 45.8 years old / sex ratio M/F = 3.4
  education
  primary : 13/40 = 32.5%
  secondary : 14/40 = 35%
  tertiary : 13/40 = 32.5%
  viral load < 1.6 log : 27/40 = 67.5%
- **Self testing**
  Positive test with correct interpretation : 25/40 = 62.5% (figure 1)

  No difference between patients and observer interpretation
  Mean time to perform testing
  - 6 minutes 40 s (min = 3 min 20s, max = 13 min 30s)
    - blood collection = 3 min 50
    - mixing and reading = 3 min 20 s

  Main reasons for failure
  - lack of blood (11)
  - wrong lancet utilization (4)
  - mixing of the samples (3)

  Factors associated with success
  young age (40.4 vs 50.8, p=0.02)
  tertiary education (53% vs 14%, p = 0.01)

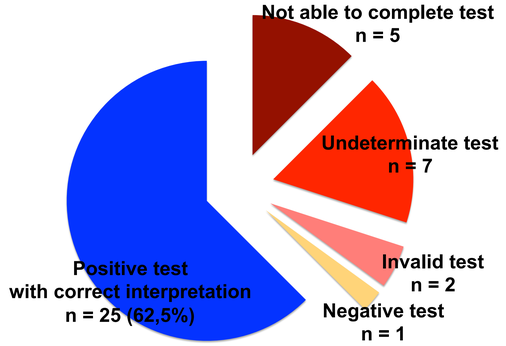


Figure 1 : results of self testing INSTI HIV1/HIV2® for 40 HIV patients

- **Questionnaires:**
  Sampling of blood
  - mild pain : 21 (52.5%)
  - no pain : 19 (47.5%)

  Notice considered as
  - adapted : 27 patients
  - relatively adapted : 13

  Performing the test
  - very easy : 22 patients
  - quiet easy : 18

  Thirty four (85%) patients would recommend this test to a friend and consider that whole blood is not an obstacle versus oral swab if sensitivity is better
- Because of low rate of feasibility, the study was stopped

Conclusion

- Less than two third of patients performed self testing with a correct result. Feasibility of self testing with INSTI VIH1/VIH2® appears to be low in our study. The main reason for failure was blood collection
- However a finger-stick whole blood test does not appear to be a barrier to self testing as was suggested in a precedent study [3]
- An improvement in the technique of whole blood collection should be made

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