Assessment of neurocognitive impairment in HIV-infected individuals over 50 years of age.

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INTRODUCTION

With an ageing HIV population, co-morbidities, possible HIV-associated neurocognitive disorders (HAND) and social issues contribute to increased anxiety and depression.

- Successful cART has lead to: 1) increased life expectancy[1]; and 2) increased non-HIV-associated comorbidities[2].
- Depression is under-diagnosed[3] and associated with HAND in older HIV-infected individuals[4].

As part of our clinical service dedicated to those aged over 50 years, we perform formal psychological and neurocognitive assessments to assess symptomatic individuals and optimise referral pathways.

METHODS

Our clinical routine HAND assessment involves:

1. screening for anxiety using GAD7 questionnaire
2. screening for depression using PHQ9 questionnaire

AND in response to patient concerns on memory, attention, cognition and function, we also perform:

a) Everyday Memory Questionnaire-Revised (EMQ), a subjective measure of memory failure in everyday life; and
b) International HIV Dementia Scale (IHDS) questionnaire.

GAD7 is a patient-completed questionnaire used to screen for generalised anxiety disorder, with reliable and accurate outcomes[5]. The individual scores 7 anxiety-related symptoms from 0-3, with an overall score ≥10 being abnormal.

PHQ9 is also a patient-completed questionnaire used to screen for depression[6]. Each of the nine DSM-IV criteria for depression are scored from 0 (not at all) – 3 (nearly every day) with a score ≥10 being considered abnormal.

EMQ is a shorter version of EMQ-28 with proven validity as a subjective measure of memory failure in everyday life[7]. It assesses retrieval (R) and attention (A) through patient-scoring of 13 symptoms. A total mean score of ≥2.07 is considered abnormal.

IHDS questionnaire screens for HIV-associated dementia by evaluation of subcortical brain function. A score of ≤10 is considered abnormal with 80% sensitivity for diagnosing dementia[8].

The patient is referred to psychology in response to an abnormal result, or for full neuropsychometric testing if both IHDS and EMQ are abnormal.

We evaluated the service and performed a univariate and multivariate logistic regression analysis (SAS version 9.1) to identify factors associated with high GAD7/PHQ9 and low EMQ/IHDS scores. These included: age, gender, ethnicity, HIV infection duration, nadir and current CD4 counts, and duration of cART treatment.

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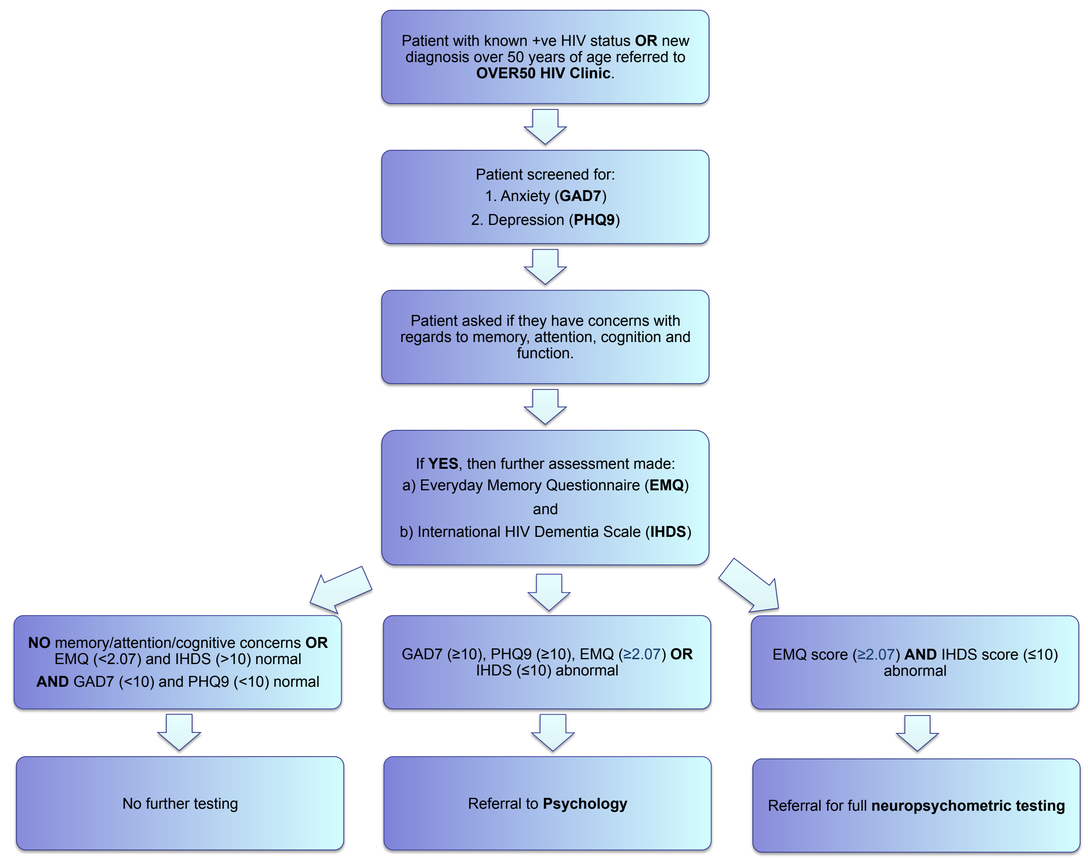
CLINIC PATHWAY

The flowchart below illustrates the clinic pathway with regards to HAND and its referral outcome.



RESULTS

Of the 176 patients who attended the OVER50 HIV clinic within 2 years, results were as follows:

	GAD7	PHQ9	EMQ	IHDS
Interpretable:	55	56	40	62
Abnormal result (%):	13 (24)	17 (30)	11 (28)	15 (24)

Median (range) age was 59 (50-84). Median (range) nadir CD4 count was 148 (61-236), current CD4 count was 557 (391-728), and duration of cART was 164 (97-228) months.

13 of 55 and 17 of 56 had a GAD7 score ≥10 and a PHQ9 score ≥10 respectively and were subsequently referred to psychology.

11 of 40 had an impaired EMQ score ≥2.07 and 15 of 62 patients had an IHDS score ≤10.

No significant associations were found for any of the studied factors on HAND assessment results. However:

- having an abnormal GAD7 score was associated with having an abnormal PHQ9 score (p = 0.038), and
- there was a trend towards having an abnormal PHQ9 score associated with a low IHDS score (p = 0.085).

CONCLUSIONS

1) Assessment for neurocognitive impairment in HIV-infected individuals over 50 years of age has been shown to be useful in its diagnosis and enhancing referral outcome.

2) HIV-infected individuals are more likely to suffer with depression in the presence of anxiety.

Exclusion of anxiety and depression when testing for HAND in patients over 50 years is important, as mental slowing, memory loss and motor disorders are common manifestations. To confirm these findings, larger cohort studies are warranted.