Barts Health NHS
NHS Trust

Late HIV diagnosis or missed HIV diagnosis- an analysis of previous hospital attendance of newly diagnosed HIV patients

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Background

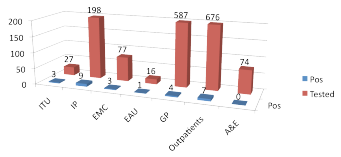
We aimed to evaluate current HIV testing efforts in a hospital located in an area of high HIV prevalence (4.56 per 1,000).
Secondly, we aimed to characterise newly diagnosed HIV patients, estimate the costs of their HIV-related admissions and further characterize their use of services in the 5 years preceding their diagnosis.
Thirdly, among patients who attended hospital previously, we aimed to identify whether indicator conditions for HIV were among the reasons for attendance.

Methods

Firstly, HIV tests requested by hospital practitioners during 2010 were provided by microbiology and were grouped by origin of request (excluding GUM, antenatal screening and TB services).
Secondly, we counted previous attendances to hospital services of newly diagnosed HIV patients from 1.1.2009-31.12.2010 for the five years preceding their HIV diagnosis as recorded by hospital database (PAS). The likely cost of hospital admission of newly diagnosed inpatients was estimated using hospital tariffs (HRG returns)
Finally we carried out a retrospective case notes review for patients who attended previously and noted indicator conditions for HIV and whether a HIV test had been offered.

Results

Fig. 1 HIV tests requested at Whipps Cross in 2010 and Positivity rates
16/318 (5%) of medical admissions tested HIV positive



Current HIV testing
•During 2010 only 318 HIV tests were requested in medical admission settings, representing 8% of the 4,000 yearly admissions aged 16-60 years old. 16/318 (5%) medical admissions tested for HIV were positive. Similarly 9/27 (33%) HIV tests in ITU, 7/676 outpatients and 0/74 HIV tests from A&E tested positive. (Fig.1)
Demographic and Immunological characteristics of newly HIV diagnosed patients
•We identified 91newly diagnosed HIV positive patients during 2009-2010, median age group being 36-40 years old (Fig.2).
•Although 50 patients (54%) were from Black Ethnic minority groups, there was a broad mix of ethnicities (Fig.3)
•Fig. 4 shows 48% of patients had a CD4 count below 100 cells/ml at the time of diagnosis (70% had a CD4<350 cells/ml) .
•Median CD4 count at time of diagnosis was 338 cells/ml among antenatal diagnoses, 213 cells/ml in GUM diagnosed patients but only 29 cells/ml in those diagnosed as inpatients (Fig.5).

Fig. 2 Age at diagnosis
77% 26-50 years old

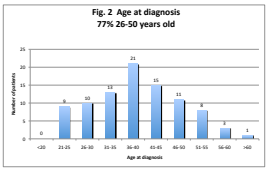


Fig. 3 Ethnicity of newly diagnosed HIV patients 2009-2010
(N=91 *chart includes patient numbers*)

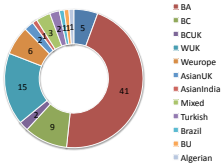


Fig.4 CD4 count at presentation
70% CD4<350 cells/ml

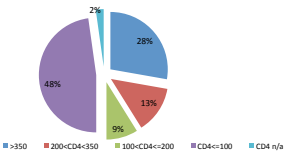
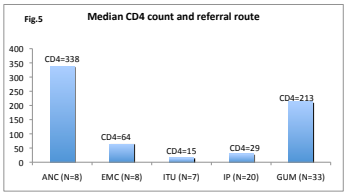


Fig.5 **Median CD4 count and referral route**



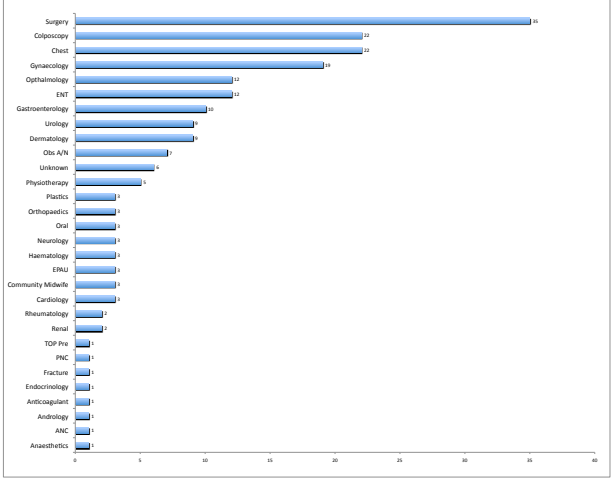
Financial impact of late HIV diagnosis at Whipps Cross Hospital 2009-2010
•33 patients were diagnosed as inpatients.
•The estimated cost of HIV-related admissions during the study period was £187,000
•In addition there were 107 ITU days required by 8 inpatients, at a cost of £159,969
Use of hospital services in the 5 years preceding their HIV diagnosis
•40/91 patients had not attended any hospital services in the preceding 5 years.
•51/91 patients had 18 hospital admissions (excluding the 33 admissions when HIV had been diagnosed) and 204 general outpatient attendances in the 5 years prior to receiving a HIV diagnosis.
•The most common specialties attended were surgery and colposcopy (fig.6).
Presentations with HIV Indicator conditions prior to HIV diagnosis

A random sub-set of 34/51 hospital records were identified and reviewed for previous presentations with HIV indicator conditions (IC) in the 5 years preceding their HIV diagnosis. 16/34 had no IC at presentation. 18/34 had a prior IC where HIV testing should have been offered

18 patients had presented with an IC prior to HIV diagnosis

- Surgery/ Urology/ENT- Weight loss investigations (Endoscopy/sigmoidoscopy), epidydimo-orchitis, chronic rhinitis, OHL, severe unresolving abscesses, fungating KS.
- Gynecology- sub fertility x2, colposcopy
- Respiratory – Community acquired pneumonia x2
- Haematology- paraproteinaemia, chronic anaemia
- Renal failure (attributed to NSAIDS but later biopsy confirmed HIVAN)
- Gastroenterology- HBV
- Dermatology- severe/ un-resolving dermatitis/ other rashes
- Neurology- cognitive impairment

Fig.6
Outpatient specialties attended in the 5 years before receiving a HIV diagnosis



Conclusions

•Only 8% of medical admissions were offered HIV testing in 2010 in spite existing guidance to expand HIV testing in this setting. Targeted testing had a high yield of HIV positive results in medical admissions and ITU but nearly half of new HIV diagnoses had a CD4 count below 100 cells/ml, a threshold well below the current definition of very late HIV diagnosis of the Health Protection Agency. This resulted in over 100 days of ITU stay and costly hospital admissions.
•The varied ethnicity of newly diagnosed HIV patients in our hospital would support further an opt-out HIV testing strategy in hospital settings.
•More than half of patients had attended Whipps Cross Hospital previously. Interestingly, the most common setting for a missed diagnosis was general outpatients, especially general surgery and colposcopy/ gynaecology. Further focused educational activities on HIV testing for doctors in these specialties are required alongside with making HIV testing more available in the outpatient setting.
•The impact of a HIV testing intervention on subsequent HIV-related ITU days of stay, length of admissions and late diagnosis will be evaluated prospectively.