

Should all HIV positive patients have a baseline chest x-ray?

AUTHORS

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Background:

- The BHIVA guidelines for the routine investigation and monitoring of adult HIV-1 infected individuals 2011 suggest baseline chest films are to be done on
 - those with a history of previous chest disease
 - those at increased risk of TB
 - intravenous drug users¹.
- For many years our HIV department has adopted a policy of performing baseline chest x-rays (CXR) on all newly diagnosed HIV positive patients including those transferred from other HIV centres.

Aim:

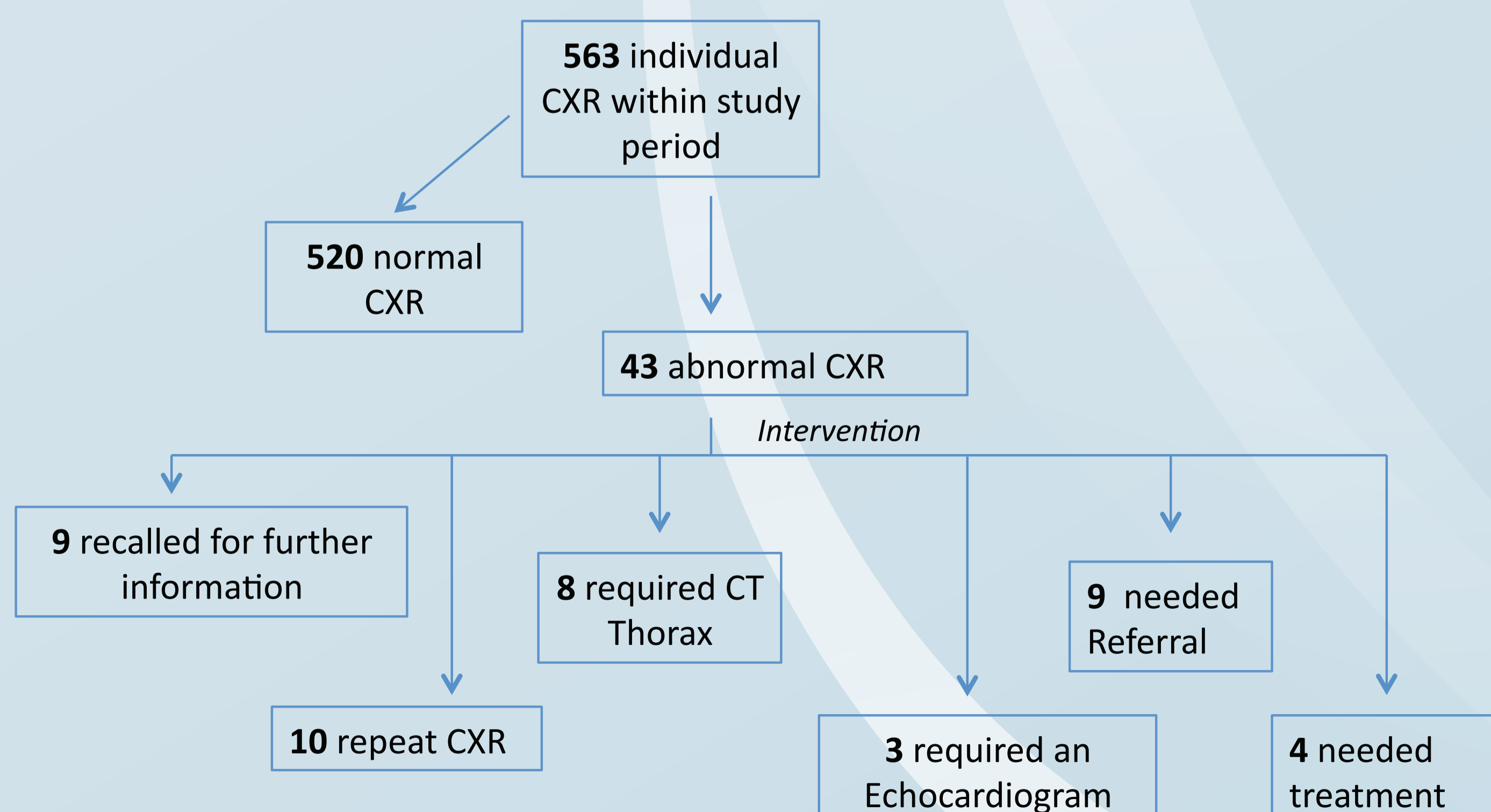
- This audit aims to identify the prevalence of abnormal chest radiographs in HIV infected individuals attending a large training HIV centre.

Methods:

- The reports of CXR investigations of all HIV infected individuals attending our department for the first time between 2010 and 2015 were reviewed.
- Abnormal CXR reports were defined as those with suspicious findings requiring further investigations.
- We stratified the abnormal CXR according to the HIV risk group, CD4 categories, sex and age groups.
- P values were obtained using Fishers Exact test, calculated by a web-based statistical programme.²

Results:

- A total of 563 HIV infected individuals attended the department for the first time within the study period. Of these, 43 (7.6%) CXR were considered to be abnormal.
- This included 21 (3.7%) heterosexual individuals from countries with high prevalence for HIV and TB and 16 (2.8%) men who have sex with men (MSM). There was no statistical difference between these two groups (P=0.39).
- Significant morbidities were identified in the MSM population (total of 4), including valvular disease, and lymphoma in which the patients were asymptomatic.
- The difference between the proportion of men and women with abnormal CXR was not significant (P=0.49).
- The difference between proportions of patients with CD4 counts >349cells/mm³ and <350cells/mm³ with abnormal CXR was also not significant (P=0.52).
- Routine performance of baseline CXR on all HIV infected patients new to the department identified an additional 19 (44.2% of all the abnormal) individuals with abnormal CXR that would have otherwise been missed.
- Of those abnormalities, 48.8% required further imaging either with CT scans, echocardiograms, or repeat chest radiographs.
- 21% required referral to a specialist.



1. Table of results

Stratification	Normal Xray (n)	Abnormal Xray (n)	%age abnormal
TOTAL	520	43	7.6
Sex			
Male	363	27	6.9
Female	157	15	8.7
Trans F	0	1	100
HIV Risk			
MSM	258	16	5.8
Het, HPHTB	239	21	8.1
IVDU	12	2	12.3
Het, LPHTB	2	3	60
MTC	5	0	0
Blood Prod.	4	1	25
CD4 count, (cells/mm ³)			
>350	318	24	7
≤350	202	19	8.6
Age (yrs)			
18-30	160	6	3.6
31-40	185	14	7
41-50	122	12	9
51+	53	11	17.2

Trans F = Trans female, MSM = Men who have sex with men, Het, HPHTB = Heterosexual, High Prevalence HIV and TB area IVDU = Intravenous Drug Use, Het, LPHTB = Heterosexual, Low Prevalence HIV and TB area, MTC = Mother to Child transmission, Blood Prod. = Infected blood products

A table demonstrating the type of abnormality seen on CXR by HIV risk group

HIV Risk Group	Total, n	Cardiac	Fracture/Surgery	Interstitial/Pulmonary	Mediastinal Mass
MSM	16	1	2	12	1
Het, HPHTB	21	4	2	12	3
IVDU	2	0	1	1	0
Het, LPHTB	3	0	0	3	0
Blood Products	1	1	0	0	0

MSM = Men who have sex with men, Het, HPHTB = Heterosexual, High Prevalence HIV and TB area IVDU = Intravenous Drug Use, Het, LPHTB = Heterosexual, Low Prevalence HIV and TB area, Blood Prod. = Infected blood products

Conclusion:

- Routine chest x-rays for all HIV infected individuals, new to the department may be helpful in the identification and management of their co-morbidities.
- Baseline CXR may also provide invaluable information for future comparisons in patients living with HIV.
- The MSM risk group were identified to have a comparable level of chest radiograph abnormalities to the heterosexuals from high prevalent TB and HIV areas. This may be due to lifestyle influences, such as smoking, which is found to be high in the MSM population.³
- A lifestyle survey in the MSM population, for both HIV positive and negative patients would be useful to observe for any differences in their chest radiograph findings.
- This study would benefit from being repeated with a larger sample size, at different HIV centres, to see if the results can be replicated elsewhere.

References:

- BHIVA guidelines for the routine investigation and monitoring of HIV-1 infected adults 2011, British HIV Association HIV Medicine (2012), 13, p39, 21.1.5
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