# The TB/HIV Registry

Surveillance Report

on TB/HIV co-infection in Hong Kong

(2013)

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# TB-HIV Registry

A total of 21 cases with TB-HIV co-infection were reported to the TB-HIV Registry in 2013. The cumulative number of cases reported to the TB-HIV Registry from all sources as in 2013 was 561 (Table 1)**.** .

The number of TB as primary AIDS-defining illness in the Hong Kong HIV/AIDS reporting system for the years 1996-2013 is shown in Table 2. Out of a total of 84 AIDS cases newly diagnosed in 2013, 17 (20.2%) had TB as a primary AIDS-defining illness, compared to 37 (44.1%) for *Pneumocystis jiroveci* pneumonia. The percentage, as well as the absolute number, of TB as the most common primary AIDS-defining illness in Hong Kong in 2013 increased compared to 2012 but were still lower than that for 2010 and 2011. Overall there was a decreasing trend of the number of TB as primary AIDS-defining illness since 2007.

Table 3 shows the distribution of ADI criteria among 375 cases reported from chest clinics and SPP for the years 1996-2013 with TB as the primary AIDS-defining illness. In Hong Kong, both pulmonary TB with a $CD_4$ count below 200/µL and extra-pulmonary TB are included in the AIDS case definition. Relatively more patients have pulmonary TB with a low $CD_4$ count as primary AIDS-defining illness compared to extra-pulmonary TB.

The pre-treatment drug sensitivity pattern among culture-positive (sputum or other specimens) TB-HIV cases for the years 1996-2013 is shown in Table 4. Of the 18 cases with a positive sputum or other specimen culture and sensitivity tests performed reported to TB-HIV Registry in 2013, 13 (72.2%) had disease due to *Mycobacterium tuberculosis* with favourable sensitivity pattern. Four (22.2%) had bacillary resistance to streptomycin and one (5.6%) had bacillary resistance to isoniazid. No patient case had MDRTB in 2013. Among all the 387 cases reported to TB-HIV Registry with a positive sputum or other specimen culture between 1996 and 2013, 5 (1.3%) had MDRTB. This figure is slightly higher than the MDRTB rate of around 1% in general population. There is no XDR-TB cases detected among the reported TB-HIV cases. DH will continue to monitor prevalence of drug resistance in the context of HIV.

Table 5 shows the characteristics of 21 patients reported from chest clinics and SPP in 2013. The characteristics of these patients are similar to those of the 2012 cohort, namely, there are greater proportions of young males and non-Chinese Asians among TB-HIV co-infected patients as compared to non-HIV infected TB patients. A lower proportion of patients had a positive sputum smear than the non HIV-infected counterpart. $CD_4$ count was generally low at time of TB diagnosis. Extra-pulmonary involvement is common, with over half of patients having TB involving one or more extra-pulmonary sites.

**Table 1. Total number of TB-HIV cases reported to TB-HIV Registry (1996-2013)***

| Year | Number of TB-HIV cases** |
|---|---|
| 1996 | 22 |
| 1997 | 19 |
| 1998 | 22 |
| 1999 | 25 |
| 2000 | 24 |
| 2001 | 34 |
| 2002 | 22 |
| 2003 | 28 |
| 2004 | 35 |
| 2005 | 42 |
| 2006 | 50 |
| 2007 | 56 |
| 2008 | 50 |
| 2009 | 38 |
| 2010 | 25 |
| 2011 | 28 |
| 2012 | 20 |
| 2013 | 21 |
| Total | 561 |

* Including cases reported from all sources (chest clinics, SPP, HA hospitals and private centres).
** Some of the figures in the table for the previous years have been updated after (1) taking out some mismatched cases and cases with a revised diagnosis (2) adding some cases which were previously unreported.

**Table 2. TB as primary ADI in Hong Kong HIV/AIDS reporting system, all sources (1996-2013)***

| Year | Number of cases with TB as primary AIDS-defining illness | Total number of reported AIDS cases | % of reported AIDS cases with TB as primary AIDS-defining illness |
|---|---|---|---|
| Pre-1996 | 21 | 175 | 12.00% |
| 1996 | 21 | 70 | 30.00% |
| 1997 | 17 | 64 | 26.56% |
| 1998 | 18 | 63 | 28.57% |
| 1999 | 13 | 61 | 21.31% |
| 2000 | 19 | 67 | 28.36% |
| 2001 | 17 | 60 | 28.33% |
| 2002 | 9 | 53 | 16.98% |
| 2003 | 15 | 56 | 26.79% |
| 2004 | 13 | 49 | 26.53% |
| 2005 | 25 | 64 | 39.06%** |
| 2006 | 26 | 73 | 35.62% |
| 2007 | 32 | 79 | 40.51%** |
| 2008 | 31 | 96 | 32.29% |
| 2009 | 24 | 76 | 31.58% |
| 2010 | 20 | 79 | 25.30% |
| 2011 | 22 | 82 | 27.00% |
| 2012 | 15 | 86 | 17.40% |
| 2013 | 17 | 84 | 20.23% |
| Total | 375 | 1437 | 26.10% |

* An expanded case definition was adopted in 1995 to include pulmonary TB cases with a CD4 count less than 200/μL.
** TB overtook *Pneumocystis jiroveci* pneumonia as the most common AIDS-defining illness in 2005 and 2007.

**Table 3. Criteria for TB as AIDS-defining illness among 375 cases reported from chest clinics and SPP (1996-2013)***

| Year | TB as AIDS-defining illness | | | | Total |
|---|---|---|---|---|---|
| | Yes | | No | Information not available | |
| | Extra-pulmonary | Pulmonary and TB cervical lymph node with CD4 < 200 µL | | | |
| 1996 | 1 | 7 | 1 | 0 | 9 |
| 1997 | 2 | 3 | 2 | 0 | 7 |
| 1998 | 6 | 3 | 3 | 0 | 12 |
| 1999 | 7 | 6 | 3 | 0 | 16 |
| 2000 | 3 | 4 | 5 | 0 | 12 |
| 2001 | 4 | 6 | 7 | 0 | 17 |
| 2002 | 4 | 9 | 2 | 0 | 15 |
| 2003 | 1 | 10 | 5 | 0 | 16 |
| 2004 | 5 | 7 | 11 | 0 | 23 |
| 2005 | 8 | 14 | 7 | 0 | 29 |
| 2006 | 9 | 19 | 7 | 0 | 35 |
| 2007 | 10 | 17 | 8 | 2 | 37 |
| 2008 | 14 | 13 | 6 | 0 | 33 |
| 2009 | 9 | 3 | 6 | 5 | 23 |
| 2010 | 4 | 10 | 5 | 3 | 22 |
| 2011 | 6 | 8 | 8 | 6 | 28 |
| 2012 | 4 | 9 | 5 | 2 | 20 |
| 2013 | 7 | 10 | 1 | 3 | 21 |
| Total | 104 | 158 | 92 | 21 | 375 |

* Some of the figures in the table for the previous years have been updated. Of all the cases reported to the TB-HIV Registry from 1996 to 2013, 375 cases were seen at chest clinics and/or SPP. The table is compiled basing on data of these 375 cases.

**Table 4. Pre-treatment drug sensitivity pattern among culture positive (sputum and/or other specimens) TB-HIV cases from TB-HIV Registry, all sources (1996-2013)***

| Year | Susceptible to SHRE | Any resistance** (non-MDR/XDR) | MDR | XDR | Total number of culture positive cases |
|---|---|---|---|---|---|
| 1996 | 7 | 1 | 0 | 0 | 8 |
| 1997 | 5 | 1 | 0 | 0 | 6 |
| 1998 | 13 | 1 | 0 | 0 | 14 |
| 1999 | 16 | 4 | 1 | 0 | 21 |
| 2000 | 13 | 2 | 0 | 0 | 15 |
| 2001 | 23 | 5 | 0 | 0 | 28 |
| 2002 | 11 | 3 | 1 | 0 | 15 |
| 2003 | 18 | 3*** | 0 (+1)*** | 0 | 21 |
| 2004 | 20 | 6 | 0 | 0 | 26 |
| 2005 | 29 | 5 | 0 | 0 | 34 |
| 2006 | 32 | 3 | 0 | 0 | 35 |
| 2007 | 30 | 7 | 1 | 0 | 38 |
| 2008 | 30 | 3 | 0 | 0 | 33 |
| 2009 | 22 | 7 | 0 | 0 | 29 |
| 2010 | 12 | 2 | 0 | 0 | 14 |
| 2011 | 12 | 4 | 0 | 0 | 16 |
| 2012 | 13 | 2 | 1 | 0 | 16 |
| 2013 | 13 | 5 | 0 | 0 | 18 |
| Total | 319 | 64 | 4 (+1)*** | 0 | 387 |

* Of all the cases reported to the TB-HIV Registry from 1996 to 2013, 387 had a positive culture (sputum or other specimens). The table is compiled basing on data of these 387 cases.
** Any pattern of drug resistance except MDR (i.e. resistant to at least both H and R) and XDR (i.e resistance to any fluoroquinolones, and at least one of the injectable drugs, in addition to MDR).
*** One of these patients had extremely poor treatment adherence, developed acquired resistance during anti-TB treatment and became MDR-TB.

**Table 5: Characteristics of 21 TB-HIV cases reported from chest clinics and SPP in 2013**

| Age distribution | Number | Proportion |
|---|---|---|
| 0 to 19 | 0 | 0.00% |
| 20 to 39 | 14 | 66.67% |
| 40 to 59 | 5 | 23.81% |
| 60+ | 2 | 9.52% |
| Sex distribution | | |
| Male | 13 | 61.90% |
| Female | 8 | 38.10% |
| Ethnicity | | |
| Chinese | 14 | 66.67% |
| Asians, non-Chinese | 6 | 28.57% |
| African | 1 | 4.76% |
| Others | 0 | 0.00% |
| Case category | | |
| New case | 20 | 95.24% |
| Relapse | 1 | 4.76% |
| Treatment after default | 0 | 0.00% |
| Failure of previous treatment | 0 | 0.00% |
| Others | 0 | 0.00% |
| TB as primary AIDS defining illness* | | |
| Yes | 17 | 94.44% |
| No | 1 | 5.56% |
| CD4 count at time of co-infection (median, IQR)** | 48 (24-118) /µL | |
| Anti-retroviral therapy at time of co-infection | | |
| Yes | 3 | 14.29% |
| No | 16 | 76.19% |
| Unknown | 2 | 9.52% |
| Presence of extra-pulmonary TB | | |
| Yes | 12 | 57.14% |
| No | 9 | 42.86% |
| Extent of Respiratory TB*** | | |
| Minimal | 7 | 41.18% |
| Moderate | 5 | 29.41% |
| Extensive | 5 | 29.41% |
| Sputum bacteriological status (pre-treatment) | | |
| Smear + culture + | 5 | 23.81% |
| Smear - culture + | 10 | 47.62% |
| Smear + culture - | 0 | 0.00% |
| Smear - culture - | 5 | 23.81% |
| Incomplete | 1 | 4.76% |
| Drug resistance pattern (pre-treatment)**** | | |
| Susceptible to SHRE | 13 | 72.22% |
| Resistant to streptomycin | 4 | 22.22% |
| Resistant to isoniazid | 1 | 5.56% |
| Resistant to rifampicin | 0 | 6.30% |
| MDR | 0 | 6.30% |
| XDR | 0 | 0.00% |

* Information on TB as primary AIDS-defining illness unknown in 3 patients.
** Information on CD4 count unknown in 3 patients.
*** 17 out of the 21 cases had lung parenchymal lesion on CXR.
**** 18 out of the 21 cases had a positive sputum or other specimen culture.