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Australian prescribers’ perspectives on ART initiation in the era of “treatment as prevention”

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This study explores Australian prescribers’ attitudes towards Treatment as Prevention (TasP) and their practices around initiating combination antiretroviral treatment (cART) for HIV. A brief online survey was conducted nationally amongst antiretroviral treatment (ART) prescribers in Australia. The sample broadly represented ART prescribers in Australia (N = 108), with 40.7% general practitioners (GPs), 25.9% sexual health clinic-based physicians and 21.3% hospital-based infectious diseases physicians. About 60% of respondents had been treating HIV-positive patients for more than 10 years. Respondents estimated that about 70–80% of all their HIV-positive patients were receiving ART. Over half of the prescribers agreed very strongly that their primary concern in recommending cART initiation was clinical benefit to individual patients rather than any population benefit. A majority of the prescribers (68.5%) strongly endorsed cART initiation before CD4 T-cell count drops below 350 cells/mm³, and a further 22.2% strongly endorsed cART initiation before CD4 T-cell count drops below 500 cells/mm³. Regarding the optimal timing of cART initiation, this study shows that prescribers in Australia in 2012 focus primarily on the benefits for their individual patients. Prescribers may need more convincing evidence of individual health benefits or increased knowledge about the population health benefits for a TasP approach to be effective in Australia.

Keywords: antiretroviral treatment; treatment initiation; HIV prevention; treatment uptake; HIV clinical markers

Introduction

The potential public health benefit of universal combination antiretroviral treatment (cART) for all people living with HIV (PLHIV) to substantially reduce HIV transmission, known as the “Treatment as Prevention” (TasP) approach, has attracted much attention in resource-rich countries in particular (Cohen et al., 2011; Cohen & Gay, 2010; Granich, Gilks, Dye, De Cock, & Williams, 2009; Williams et al., 2006; Wilson, 2009, 2010). Antiretroviral treatment (ART) prescription in Australia is largely negotiated between prescribers and their patients on a case-by-case basis, although it is generally concordant with local guidelines (Bloch et al., 2012; Grierson et al., 2009; Hoy, Lewin, Post, & Street, 2009; Kelly, Broom, & Young, 2012). Currently, the Australian government-subsidised cART is available for citizens and permanent residents who meet certain eligibility criteria, namely, a symptomatic HIV disease stage or a CD4 T-cell count below 500 cells/mm³ (Hoy et al., 2009; The Australian ARV Guidelines Panel, 2012). In most clinical encounters, in addition to HIV-specific clinical markers, including CD4 T-cell counts and viral load levels, other factors such as patients’ understandings of and readiness for cART are regarded as critical in choosing the most appropriate timing to commence individually tailored regimens (Ezzy, Bartos, Visser, & Rosenthal, 1998; Hoy et al., 2009; Zablotska et al., 2009). Although prescribers in Australia play an important role in recommending ART initiation, the final decisions when to commence ART is jointly made by prescribers and patients (Bloch et al., 2012; Ezzy et al., 1998; Grierson et al., 2009).

With the recent interest in the TasP approach, it is important to understand ART prescribers’ acceptance of and readiness for earlier (i.e., CD4+ T-cell count above 350 cells/mm³) or universal (i.e., immediately after diagnosis irrespective of CD4+ T-cell count) treatment initiation. This study focuses on attitudes towards and current practices around cART prescription from the perspectives of ART prescribers in Australia.

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Methods
A link to the brief online survey was emailed to registered ART prescribers and was accessible online from April to May 2012. The survey was anonymous for self-completion with no reimbursement. We received 108 valid responses, and the estimated response rate was 51%.

The questionnaire covered demographic characteristics and attitudes towards and current practices around cART prescription. Two questions pertained to prescribers’ primary concerns for recommending cART initiation: one referred to its benefit to each individual patient’s health and the other to population health. Each of these two items was measured on a scale from 0 (completely disagree) to 10 (completely agree) with a mid-point of 5 (neutral).

Prescribers were invited to indicate their strongest recommendation for cART initiation: (1) immediately after an HIV diagnosis, irrespective of CD4+ count or HIV viral load levels; (2) before CD4+ count drops below 500 cells cells/mm³; (3) before CD4+ count drops below 350 cells/mm³ and (4) other conditions to be specified.

Respondents were also asked to estimate the proportions of their patients who were receiving ART, first, for all patients and then for subgroups stratified by CD4+ count > 750 cells/mm³, 501–750 cells/mm³, 350–500 cells/mm³ and < 350 cells/mm³. Each of these items was measured on a scale from 1 (<10%) to 10 (>90%). Of the patients receiving cART, respondents were further required to estimate the proportion whose serum viral load was undetectable. Respondents’ estimated figures were treated as surrogate markers of their current practices around ART prescription.

Means, standard deviations (SD) and medians were calculated to summarise continuous or ordinal variables, and proportions were tabulated for categorical variables. Group comparisons were further made by speciality (i.e., general practitioners (GPs) vs. sexual health clinic-based physicians vs. hospital-based infectious disease physicians) and caseload levels (i.e., being the primary HIV provider for 1–30 vs. for more than 30 HIV-positive patients). Fisher’s exact tests were applied to examine statistical differences.

Results
Of the 108 respondents included in the analysis, 56.5% were male. The mean age was 48.1 years (SD = 9.4; median = 49). The majority of respondents (86.1%) were practising in three Eastern Australian states: 48.1% in New South Wales, 25.0% in Victoria and 13.0% in Queensland. This corresponds with the geographic concentration of diagnosed PLHIV in Australia with about 85% of them currently living in three eastern states (Jansson & Wilson, 2012).

In terms of speciality, the largest group consisted of GPs (40.7%) followed by public sexual health clinic-based physicians (25.9%) and public hospital-based infectious disease physicians (21.3%). The majority of respondents (60.2%) had more than 10 years experience in treating HIV-positive patients. Overall, 37.9% were the primary HIV care provider for more than 50 HIV-positive patients at the time of the survey.

Over half (54.6%) of the respondents very strongly agreed (score > 8) that their primary concern with respect to cART initiation was its benefit to each individual patient’s health. In contrast, only 20 (18.6%) agreed, to some extent (score > 5), that it was cART’s population benefit. Differences in speciality or caseload levels did not significantly alter the results (data not shown).

In terms of the CD4+ count level at which respondents would make the strongest recommendation for cART initiation, 68.5% considered at CD4+ count below 350 cells/mm³ and a further 22.2% considered at CD4+ count below 500 cells/mm³. Differences in speciality or caseload levels did not significantly alter the results (data not shown). Only five prescribers (4.6%) most strongly recommended initiation immediately following HIV diagnosis. For the remaining four respondents who provided additional information on this topic, two indicated consideration on a case-by-case basis, one at the onset of HIV symptoms and one at CD4+ count below 300 cells/mm³.

The median of their estimated proportion of all HIV-positive patients taking cART at the time of the survey was between 70% and 80%. Furthermore, according to the medians, estimated proportions of cART uptake increased as CD4+ count levels decreased (Figure 1). In terms of successful viral load suppression, the median of respondents’ estimated proportion of patients on cART with an undetectable serum viral load was between 80% and 90%. A majority of the respondents reported serum viral load detection at the threshold of 20 copies/ml (63.0%) or 50 copies/ml (34.0%) in their local laboratories.

Discussion and conclusions
To the best of our knowledge, this is the first study to explore Australian prescribers’ attitudes towards and practices around ART initiation. A majority of the
prescribers surveyed reported that they recommend cART initiation before pre-treatment CD4+ T-cell count drops below 350 cells/mm³. This is not surprising, as this practice is supported by the most rigorous evidence currently available (Panel on Antiretroviral Guidelines for Adults and Adolescents, 2012; The Australian ARV Guidelines Panel, 2012). In contrast, few reported that they would initiate cART initiation at an earlier stage of infection (i.e., at CD4+ T-cell count above 500 cells/mm³) or immediately after an HIV diagnosis, without other clinical indications.

Overall, the respondents were very experienced in providing HIV-related clinical treatment and care to HIV-positive patients. As a result, their estimated ART uptake rates and estimated viral load suppression rates from their clinical experiences are reasonably consistent with the population-based estimates and clinical observations in Australia with approximately 70–80% of diagnosed PLHIV in Australia are estimated to be on cART, a further 5–10% have used ART in the past and around 15–20% are likely to be cART-naïve currently (Falster et al., 2008; Grierson et al., 2009; Law et al., 2011; Mao et al., 2011; The Kirby Institute, 2011).

The three main limitations of the study were: self-reported data, limited scope of survey contents and moderate response rate. In addition, to reduce potential recall bias, rates of ART uptake were estimated according to patients’ CD4+ T-cell count levels at the time of the survey, rather than at the time of treatment initiation (i.e., pre-treatment CD4+ T-cell counts). ART’s short- and longer-term clinical benefit to individual patients could not be accurately assessed in this study.

Our study identified that prescribers currently consider the individual health benefits of cART more than the population health benefits. The proposed TasP approach requires PLHIV, in some instances, to bear a significant additional treatment burden for the benefit of the uninfected, including lifelong adherence and possible serious side effects and toxicity (Emery et al., 2008; Granich et al., 2009; Wilson, 2012). Prescribers may require more convincing evidence of individual health benefits from earlier cART initiation. Also, the study underscores the importance of informing prescribers of the synergy between clinical benefit to individual patients and public health benefit to those at risk of HIV infection. For example, successful treatment of an HIV-positive patient can significantly reduce the probability of HIV transmission to his uninfected partner (Vernazza, Hirschel, Bernasconi, & Flepp, 2008). Furthermore, in Australia, up to 30% of PLHIV are undiagnosed (Birrell et al., 2010; Pedrana, Hellard, Wilson, Guy, & Stoove, 2012). This group is likely to be diagnosed at a later stage of HIV disease progression and may benefit substantially from immediate cART initiation (Holtgrave, Maulsby, Wehrmeyer, & Hall, 2012; Wilson et al., 2011).

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