

Leitlinien der Deutschen Gesellschaft für Suchtmedizin (DGS e.V.), der Deutschen AIDS-Gesellschaft (DAIG) und der Deutschen Arbeitsgemeinschaft niedergelassener Ärzte (DAGNÄ): HIV-Infektion bei intravenös Drogenabhängigen (IVDA)

Konsensustext zur Abstimmung am 5. Juli 2008 auf dem 9. Interdisziplinären Kongress für Suchtmedizin in München

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Zu den folgenden Fragen sollte Stellung bezogen werden:

1. Wie hoch sind Prävalenz und Inzidenz der HIV-Infektion unter IVDA?
2. Welche Diagnostik ist notwendig?
3. Wann sollen IVDA mit einer HIV-Infektion antiretroviral behandelt werden?
4. Gibt es Besonderheiten bei der Initialtherapie?
5. Wie soll bei psychiatrischer Komorbidität vorgegangen werden?
6. Welche Wechselwirkungen sind zu beachten?
7. Gibt es speziell zu beachtende Nebenwirkungen?

Tabelle: Evidenzgrade zur Bewertung von Studien - Empfehlungsklasse

A	Ia Evidenz aufgrund von Metaanalysen randomisierter, kontrollierter Studien
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	Ib Evidenz aufgrund von mindestens einer randomisierten, kontrollierten Studie
B	IIa Evidenz aufgrund von mindestens einer gut angelegten, kontrollierten Studie ohne Randomisierung IIb Evidenz aufgrund mindestens einer anderen Art von gut angelegter, quasiexperimenteller Studie III Evidenz aufgrund gut angelegter, nichtexperimenteller, deskriptiver Studien wie z. B. Vergleichsstudien, Korrelationsstudien und Fallkontrollstudien
C	IV Evidenz aufgrund von Berichten von Expertenausschüssen oder Expertenmeinungen und/oder klinischen Erfahrungen anerkannter Autoritäten; Fehlen direkt anwendbarer klinischer Studien guter Qualität

Der Textentwurf wurde aufgrund der Literaturrecherche, den Vorträgen und Diskussionsbeiträgen des Expertentreffens am 5. April 2008 in Köln von der Arbeitsgruppe und den von den Experten zu verschiedenen Themen publizierten Artikel formuliert.

Vorträge auf der Expertentagung zur Erstellung der Leitlinien für HIV bei Drogenkonsumenten am 5. April 2008 in Köln:	
Epidemiologie	Ulrich Marcus, Berlin
Diagnostik	Günther Schmutz, Düsseldorf
Strategien der Initialtherapie	Milo Huber, Zürich
Wechselwirkungen	Hartmut Klinker, Würzburg
Differentialtherapie bei psychiatrischer Komorbidität	Jens Reimer, Hamburg
Nebenwirkungen	Georg Behrens, Hannover
Patientenmanagement	Birger Kuhlmann, Hannover

Publizierte Artikel der Experten in Suchtmedizin in Forschung und Praxis 2008; 10 (S1):	
Methodik	Markus Backmund, Ramona Pauli-Volkert, München
HIV bei intravenös Drogengebrauchern	Ulrich Marcus, Berlin
Diagnostik bei HIV-infizierten i.v. Drogenkonsumenten	Günther Schmutz, Düsseldorf
Strategien zur Initialtherapie	Milo Huber, Zürich
Differentialtherapie bei psychiatrischer Komorbidität	Michael Krausz,
Vancouver	
Wechselwirkungen zwischen antiretroviraler Therapie (ART) und Substitutionsmedikamenten	Harald Klinker, Würzburg
Nebenwirkungen der antiretroviralen Therapie bei drogenabhängigen HIV-Patienten	Georg Behrens, Hannover
Management von opioidabhängigen Patienten bei antiretroviraler Therapie (ART)	Birger Kuhlmann, Hannover

Konsensustextentwurf:

Dem Text liegen nachstehende Definitionen und Begriffe zugrunde:

- „intravenös Drogenabhängige“ (IVDA) meint alle Patienten, die früher intravenös Drogen konsumiert haben oder aktuell konsumieren.

- Definition von integriertem Setting: intaktes Netzwerk von psychiatrisch und infektiologisch erfahrenen Suchtmediziner*innen möglichst an einem Ort.

Einleitung

Hinsichtlich der Diagnostik und Therapie der HIV-Infektion werden die jeweils bestehenden Deutsch-Österreichischen Leitlinien sowie die europäischen Leitlinien der European AIDS Clinical Society zur Behandlung der HIV-Infektion bei Erwachsenen zu Grunde gelegt. Bei Initialtherapie werden derzeit die europäischen Leitlinien herangezogen.

Fragestellungen

1

Wie hoch sind Prävalenz und Inzidenz der HIV-Infektion unter IVDA?
Welche Präventionsmassnahmen sind sinnvoll?

Empfehlung

Die Aufklärung von IVDA über die Verhinderung von HIV- und Hepatitis B und C-Infektionen muss sowohl „safer use“ als auch „safer sex“ beinhalten (A).

Eine niedrigschwellige Verfügbarkeit von sterilen Injektionsutensilien wie z.B. über Nadel-Spritzen-Austauschprogramme reduziert die HIV-Inzidenz unter Drogenabhängigen und sollte flächendeckend und auch in Haftanstalten angeboten werden (A).

Die Substitutionsbehandlung verhindert HIV-Neuinfektionen unter IVDA und soll als Kassenleistung flächendeckend angeboten werden (A).

Konsens: 1. Satz 100%, 2. Satz 96,2%, 3. Satz 100%

Erläuterung

Repräsentative nationale oder regionale Studien zur Prävalenz und Inzidenz von Infektionen mit HIV und Hepatitis B- und C-Viren bei IVDU wurden in Deutschland bislang nicht durchgeführt. Alle Daten zur Prävalenz und Inzidenz beziehen sich daher auf mehr oder weniger stark selektierte Subpopulationen oder es handelt sich um Schätzungen.

Die Angaben zur HIV-Prävalenz unter IVDA sind je nach Untersuchungspopulation und Region sehr unterschiedlich (A). In Deutschland betragen sie zwischen 5% in München und 50% in Haftanstalten in Berlin (B).

Das Robert Koch-Institut schätzt die Gesamtzahl der aktuell mit HIV in Deutschland lebenden Personen, die sich im Kontext von intravenösem Drogenkonsum mit HIV infiziert haben, auf derzeit ca. 7.000 Personen. Der Nenner, auf den diese Zahl bezogen werden müsste, ist nicht klar quantifizierbar. Nicht alle Personen, die sich im Kontext von intravenösem Drogenkonsum mit

HIV infiziert haben, sind auch aktuell noch aktive Drogenkonsumenten, und zur Gesamtzahl der aktiv intravenös Drogen konsumierenden Personen in Deutschland liegen unterschiedliche Schätzungen vor. Die Zahl der HIV-Neuinfektionen pro Jahr, die auf intravenösen Drogenkonsum zurückzuführen sind, wird auf aktuell knapp über 200 geschätzt. Ein Teil dieser Infektionen könnte allerdings auch durch sexuelle Übertragungen bedingt sein.

In besonders stark betroffenen Regionen osteuropäischer Länder wurden in lokalen Populationen von aktiven Drogenkonsumenten HIV-Prävalenzraten von bis zu über 90% beschrieben (B).

Weltweit betreffen 10% aller HIV-Neuinfektionen IVDU, in Deutschland sind es aktuell ca. 7% (B). In osteuropäischen und asiatischen Ländern wird die HIV-Epidemie wesentlich durch IVDA vorangetrieben (B).

Weltweit wird die Zahl von IVDA auf 13 Millionen Menschen geschätzt (Aceijas et al. 2004).

HIV-Epidemien, die durch IVDA vorangetrieben werden, sind vor allem in Osteuropa, Zentralasien, Südostasien und China zu beobachten (Platt et al. 2006, UNAIDS 2006, Dehne et al. 1999). In Deutschland ist die Gruppe der IVDA seit mehr als 10 Jahren mit 13% die viertgrößte Gruppe hinsichtlich Neuinfektionen (Hamouda et al. 2007). Das gemeinsame Benutzen von Nadeln und Spritzen birgt das größte Risiko einer HIV-Transmission bei IVDA und kann effektiv durch Spritzen und Nadel-Austauschprogramme vermindert werden (Johnson et al. 2002, WHO 2007). Zusätzlich sind IVDU durch sexuelle Übertragung des HI-Virus gefährdet, insbesondere dann, wenn sich die HIV-Infektion in der IVDU-Population etabliert hat und/oder durch erhöhtes Risikoverhalten nach Drogeneinnahme (Backmund et al. 2005, Desjarlais et al. 2005, Bolding et al. 2006, RKI 2006, Neaigus et al. 2007, Marcus 2008).

Literatur

Backmund M, Meyer K, Henkel C, Reimer J, Wächtler M, Schütz CG. Risk factors and predictors of human immunodeficiency virus infection among injection drug users. *Eur Addict Res* 2005; 11: 138-144.

Bolding G, Hart G, Sherr L et al. Use of crystal methamphetamine among gay men in London. *Addiction* 2006; 101: 1622-1630.

Dehne, K. L., L. Khodakevich, et al. (1999). "The HIV/AIDS epidemic in eastern Europe: recent patterns and trends and their implications for policy-making." *AIDS* 13(7): 741-9.

Des Jarlais DC, Perlis T, Arasteh K, Torian LV, Hagan H, Beatrice S, Smith L, Wethers J, Milliken J, Mildvan D, Yancovitz S, Friedman SR. Reductions in hepatitis C virus and HIV infections among injecting drug users in New York City, 1990-2001. *AIDS* 2005 Oct;19 Suppl 3:S20-5

Hamouda O, Marcus U, Voß L, Kollan C. Verlauf der HIV-Epidemie in Deutschland. *Bundesgesundheitsbl* 2007; 50: 399-411.

Johnson RA, Gerstein DR, Cerbone FG, Brown J. HIV risk behaviors in African-American drug injector networks: implications of injection-partner mixing and partnership characteristics. *Addiction* 2002; 97: 1011-1024.

Marcus U. Epidemiologie bei i.v.-Drogenkonsumenten. *Suchtmed* 2008; 10 (S1): in Druck.

Neaigus A, Gyarmathy VA, Miller M, Frajzyngier V, Zhao M, Friedman SR, Des Jarlais DC. Injecting and sexual risk correlates of HBV and HCV seroprevalence among new drug injectors. *Drug Alcohol Depend* 2007; 89: 234-243

Platt L, Bobraca N, Rhodes T, Uuskula A, Parry JV, Ruutel K, Talu A, Abel K, Rajaleid K, Judd A. High HIV prevalence among injecting drug users in Estonia: implications for understanding the risk environment. *AIDS* 2006; 20: 2120-2123.

RKI - Robert Koch Institut. Epidemiologisches Bulletin 2006; 47: 411-426.

UNAIDS (Joint United Nations Programme on HIV/AIDS). 2006 Report on the Global AIDS Epidemic: A UNAIDS 10th anniversary special edition. Geneva, Switzerland: UNAIDS 2006.

WHO. HIV/AIDS Treatment and Care – Clinical protocols for the WHO European Region. 2007: www.euro.who.int/pubrequest

2

Welche Diagnostik ist notwendig?

Empfehlung

Die Anamnese muss die Einnahme psychotroper Substanzen im Verlauf beinhalten (A).

Die Anamnese muss den aktuellen Konsum psychotroper Substanzen beinhalten (A).

Psychische Beschwerden müssen wegen der hohen Komorbidität psychiatrischer Krankheiten evaluiert werden (A).

Es muss überprüft werden, ob sich die Patientin/der Patient in einer Substitutionsbehandlung befindet oder nicht (A).

Die Angaben sollten durch ein Drogenscreening im Urin verifiziert werden (A).

Beim Erstkontakt muss der Hepatitis A-, Hepatitis B- und Hepatitis C- Status überprüft werden (A).

Patienten mit HIV-Infektion haben gemäß den Empfehlungen der STIKO eine Indikation für die Impfung gegen Hepatitis A und B sowie Pneumokokken, Meningokokken und Influenza (A).

Einmal jährlich muss der Hepatitis C- Status überprüft werden (A). Bei nicht oder nicht ausreichend Geimpften und noch Suszeptiblen muss der Hepatitis A- und B- Status einmal jährlich überprüft werden (A).

Konsens: 1. – 4. Satz, 7., 8. Satz jeweils 100%, 5., 6.Satz 92%

Erläuterung

Prinzipiell soll gemäß den bestehenden HIV-Leitlinien diagnostiziert werden, die in der Regel eine umfassende Anamnese und die Erhebung des körperlichen und psychischen Status beinhalten (Deutsch-Österreichische AIDS-Gesellschaft 2008, Panel on Antiretroviral Guidelines for Adults and Adolescents 2008). IVDA leiden sehr häufig zusätzlich an psychiatrischen Erkrankungen (Krausz 2008, Krausz et al. 1998).

Literatur

Deutsche und Österreichische AIDS-Gesellschaft. Deutsch-Österreichische Leitlinien zur antiretroviralen Therapie der HIV-Infektion (Teilaktualisierung Indikationsstellung, Stand September 2007). Siehe <http://www.daignet.de/site-content/hiv-therapie/leitlinien-1>. Accessed (Stand Mai 2008)

Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Sciences. January 29, 2008; 1-128.
<http://www.aidsinfo.nih.gov/ContentFiles/AdultandAdolescentGL.pdf>. (Stand Mai 2008)

Krausz M, Degkwitz P, Kuhne A, Verthein U. Comorbidity and mental disorders. *Addict Behav* 1998b; 23: 767-783

Krausz M. Differentialtherapie bei IVDA. *Suchtmed* 2008; 10: in Druck.

Schmutz G. Diagnostik bei HIV-infizierten i.v. Drogenkonsumenten. *Suchtmed* 2008; 10 (S1): in Druck.

3

Wann sollen IVDA mit einer HIV-Infektion antiretroviral behandelt werden?

Empfehlung

Ehemalige IVDA und IVDA, die sich in einer stabilen Substitutionsbehandlung befinden, sollen nach den gleichen Kriterien und zum gleichen Zeitpunkt wie Nicht-IVDA eine antiretrovirale Therapie erhalten (A.)

Bei IVDA, die sich in einer nicht stabilen Substitutionsbehandlung befinden (Termine nicht zuverlässig einhalten können, unregelmäßig kommen) soll vor einer antiretroviralen Therapie u.a. mit Hilfe der psychosozialen Betreuung versucht werden, die Patientin/den Patienten in eine stabile Substitutionsbehandlung zu bringen (A).

IVDA, die keine Substitutionsbehandlung erhalten, sollen vor Beginn einer HIV-Therapie in eine stabile Substitutionsbehandlung gebracht werden (A). IVDA, die eine HIV-Therapie wünschen, bei denen die Indikation zu einer solchen besteht und die keine Substitutionsbehandlung wünschen, ist eine HIV-Therapie anzubieten (A).

Konsens: 1., 2. Satz 100%, 3. Satz 85,5%

Erläuterung

Alle anerkannten Behandlungsrichtlinien empfehlen für IVDA keinen abweichenden Behandlungszeitpunkt für den Beginn einer antiretroviralen Therapie (ART) (European AIDS Clinical Society 2007, (Deutsch-Österreichische AIDS-Gesellschaft 2008, Panel on Antiretroviral Guidelines for Adults and Adolescents 2008, WHO 2007). Sie weisen darauf hin, dass eine gute Therapieadhärenz angestrebt werden soll (Deutsch-Österreichische AIDS-Gesellschaft 2008, Panel on Antiretroviral Guidelines for Adults and Adolescents 2008, WHO 2007). Das beste Setting für die Behandlung chronischer Erkrankungen bei IVDA stellt die Substitutionsbehandlung dar (Backmund et al. 2001, Backmund et al. 2005, Backmund 2007).. Allen HIV-Patienten soll bei entsprechender Indikation eine HIV-Therapie angeboten bzw. ermöglicht werden (WHO 2007, Panel on Antiretroviral Guidelines for Adults and Adolescents 2008).

In der Fachwelt ist unbestritten, dass ein Immunstatus mit weniger 200 CD4-Zellen/ μ l eine dringliche Indikation zur antiretroviralen Therapie darstellt (Übersicht bei Hoffmann et al. 2007, Huber 2008, Deutsch-Österreichische AIDS-Gesellschaft 2008). Symptomatische Patientinnen und Patienten und schwangere Patientinnen sollten unabhängig von der CD4-Zellzahl therapiert

werden, wobei eine opportunistische Infektion in der Regel vor Beginn der antiretroviralen Therapie behandelt werden muss, um ein Immunrekonstitutions-Syndrom (IRIS) zu verhindern.

Tabelle	CDC-Klassifikation		
	A	B	C
CD4-Zellen/ μ l	asymptomatisch	Spezifische Symptome, kein AIDS	Spezifische Symptome, AIDS
1: ≥ 500	A1	B1	C1
2: 200-499	A2	B2	C2
3: < 200	A3	B3	C3

Tabelle				Antiretroviraler (ART) Therapiebeginn
CDC-Klassifikation	CD4-Zellen/ μ l	Viruslast Kopien/ml	Entscheidung	
CDC A	> 500	unabhängig	abwarten	
CDC A	$> 350 - 500$	> 100.000	anbieten	
CDC A	$> 350 - 500$	< 100.000	anbieten, wenn HCV-Koinfektion,	
> 55 Jahre oder CD4-Abfall $> 50-100/\mu$ l/Jahr				
CDC A	200 – 350	unabhängig	empfehlen	
CDC A	< 200	unabhängig	dringend empfehlen	
CDC B, C	unabhängig	unabhängig	empfehlen	

Quelle: European AIDS Clinical Society 2007

Literatur

Backmund M, Meyer K, von Zielonka M, Eichenlaub D. Treatment of hepatitis C infection in injection drug users. *Hepatology* 2001a 34: 188-193.

Backmund M, Meyer K, Henkel C, Reimer J, Wächtler M, Schütz CG. Risk factors and predictors of human immunodeficiency virus infection among injection drug users. *Eur Addict Res* 2005; 11: 138-144.

Backmund M. Ansprechbarkeit von Drogengebrauchern über Infektionsrisiken für HIV und HCV. Opioidabhängigkeit und HIV-Infektion. *Bundesgesundheitsbl* 2007; 50: 471-475.

Deutsche und Österreichische AIDS-Gesellschaft. Deutsch-Österreichische Leitlinien zur antiretroviralen Therapie der HIV-Infektion (Teilaktualisierung Indikationsstellung, Stand September 2007). Siehe <http://www.daignet.de/site-content/hiv-therapie/leitlinien-1>. Accessed (Stand Mai 2008)

European AIDS Clinical Society (EACS): Guidelines 2007. Guidelines for the Clinical Management and Treatment of HIV Infected Adults in Europe.

Hoffmann C, Rockstroh J, Kamps B. HIV.NET 2007. Steinhäuser Verlag. Wuppertal-Beyenburg 2007. www.hiv.net

Huber M. Strategien zur Ersttherapie. *Suchtmed* 2008; 10 (1S): in Druck.

Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Department of Health and Human Sciences. January 29, 2008; 1-128.

4

Gibt es Besonderheiten bei der Initialtherapie?

Empfehlung

Bei der Auswahl des antiretroviralen Therapieregimes ist die Adhärenz des Patienten/in zu berücksichtigen.

Bei IDVA ohne stabile Substitution soll ein ART-Regime gewählt werden, dass nur einmal täglich eingenommen werden muss (C).

Die ART sollte direkt vor dem Substitutionsmittel unter Sicht des Arztes/medizinischen Personals eingenommen werden (A).

Konsensus: 1., 2. Satz 100%, 3. Satz 88,6%

Erläuterung

Da während der Substitutionsbehandlung in der Regel die Patientinnen und Patienten täglich vom Arzt oder dem medizinischen Personal gesehen werden, kann eine Koppelung der Einnahme der ART an die Substitutionsmittelvergabe zu einer sehr hohen Adhärenz führen (Backmund et al. 2001, , Conway et al. 2004, Lucas et al. 2004, Altice et al. 2007, Backmund 2008, Viciano et al. 2008).

Tabelle: Medikamente für die HIV-Therapie bei Opioidabhängigen (aus Backmund 2008)

Abkürzung	Substanz	Medikament	Dosis
1. Einmal tägliche Gabe möglich:			
TDF	Tenofovir DF	Viread®	1 x 300 mg
FTC	Emtricitabin	Emtriva®	1 x 200 mg
EFV	Efavirenz	Sustiva®	1 x 600 mg
TDF/FTC	TVD	Truvada®	1 x 300/200 mg
TDF/FTC/EFV	ATR	Atripla®	1 x 300/200/600 mg
ABC/3TC		Kivexa	1x 600/300 mg
3TC	Lamivudin	Epivir®	1 x 300 mg
ddI	Didanosin	Videx®	1 x 250 oder 400 mg
d4T	Stavudin	Zerit® XR	1 x 075 oder 100 mg
ATV	Atazanair	Reyataz®	1 x 300 mg ^{1,2}
2. Zweimal tägliche Gabe möglich			
AZT	Zidovudin	Retrovir®	2 x 250 mg
d4T		Zerit	2 x 30 bzw 40 mg
ABC	Abacavir	Ziagen®	2 x 300 mg
AZT/3TC	CBV	Combivir®	2 x 300/150 mg
AZT/3TC/ABC	TZV	Trizivir®	2 x 300/150/300 mg
NVP	Nevirapin	Viramune®	1 x 200 mg, nach 14 Tagen 2 x 200 mg

LPV/r	Lopinavir/Ritonavir	Kaletra®	2 x 200/50 mg
SQV	Saquinavir	Invirase® 500	2 x 500 mg ²
fAPV/r	Fosamprenavir	Telzir®	2 x 700 mg ²
TPV	Tipranavir	Aptivus®	2 x 250 mg ²
DRV	Darunavir	Prezista®	2 x 300 mg ²
ENF	Enfuvirtid	Fuzeon®	2 x 1 ml à 90 mg s.c.
RAL	Raltegravir	Isentress®	2 x 400 mg ¹
MVC	Maraviroc	Celsentri®	2 x 300 mg ³

¹bei vorbehandelten Patienten; ² Boostern mit je 100 mg RTV; ³ nur bei CCR5-Tropismus

Die europäischen Leitlinien zur antiretroviralen Initialtherapie empfehlen Tenofovir und Emtricitabin oder Abacavir und Lamivudin in Kombination mit Efavirenz oder Nevirapin oder geboostertem Fosamprenavir oder Lopinavir oder Saquinavir (European AIDS Clinical Society 2007). Bei Patienten mit replikativer Hepatitis B sollte Tenofovir/Emtricitabin Bestandteil der ART sein.

Literatur

Altice FL, Maru DS, Bruce RD, Springer SA, Friedland GH. Superiority of directly administered antiretroviral therapy over selfadministered therapy among HIV-infected drug users: a prospective, randomized, controlled trial. Clin Infect Dis 2007; 45: 770-778.

Backmund M, Meyer K, von Zielonka M, Eichenlaub D. Treatment of hepatitis C infection in injection drug users. Hepatology 2001a 34: 188-193.

Backmund M. Heroinabhängigkeit – Hepatitis C – HIV. Ecomed-verlag 2008, in Druck

Conway B, Prasad J, Reynolds R, Farley J, Jones M, Jutha S, Smith N, Mead A, DeVlaming S. Directly observed therapy fort he management of HIV-infected patients in a methadone program. Clin Infect Dis 2004; 38 Suppl5: S402-S408.

European AIDS Clinical Society (EACS): Guidelines 2007. Guidelines for the Clinical Management and Treatment of HIV Infected Adults in Europe.

Lucas GM, Mullen BA, McCaul ME, Weidle PJ, Hader S, Moore RD. Adherence, drug use, and treatment failure in a methadone-clinic-based program of directly administered antiretroviral therapy. AIDS Patient Care STDS 2007; 21: 564-574.

Viciano P, Rubio R, Ribera E, Knobel H, Iribarren JA, Arribas JR, Pérez-Molina JA; Investigadores del Estudio CUVA. Enferm Infecc Microbiol Clin 2008; 26: 127-134.

5

Wie soll bei psychiatrischer Komorbidität vorgegangen werden?

<p>Empfehlung</p> <p>Der bei der initialen Diagnostik erhobene psychopathologische Befund soll im Verlauf kontrolliert werden (C).</p> <p>Psychiatrische Erkrankungen wie bipolare Störungen und Erkrankungen aus dem schizophränen Formenkreis müssen medikamentös und psychotherapeutisch behandelt werden (A).</p> <p>Antidepressiva der ersten Wahl sind SSRI, insbesondere Citalopram und Escitalopram (C).</p>

Zur Behandlung der Schizophrenie sollten primär atypische Neuroleptika eingesetzt werden (C).

Konsens: 1. Satz 96,2%, 2. Satz 92,3%, 3. Satz 87%, 4. Satz 85,7%

Erläuterung

IVDA leiden sehr häufig zusätzlich an psychiatrischen Erkrankungen (Krausz 2008, Krausz et al. 1998). Inwieweit Antidepressiva und/oder Neuroleptika bei gleichzeitiger Gabe von Opioiden wirken, ist noch kaum untersucht worden. Die wenigen Studien kommen zu unterschiedlichen Ergebnissen. Citalopram allein oder in Kombination mit Bupropion scheint bei mit Methadon behandelten Patienten hinsichtlich der Therapie der Depression nicht erfolgreich zu sein (Poling et al. 2007). Eine ältere Arbeit zeigte keine Wirkung von Fluoxetin in der Therapie depressiver Patienten während einer Methadonsubstitutionsbehandlung (Petrakis et al. 1998). Eine neuere Arbeit konnte hingegen zeigen, dass eine Reduktion des Benzodiazepinkonsums bei Steigerung der Psychopharmakotherapie zu einer Verminderung der depressiven Symptomatik bei mit Methadon behandelten Patienten führte (Schreiber et al. 2008). Auch für die Behandlung suchtkrankender Menschen, die zusätzlich an einer Psychose erkrankt sind, liegen praktisch keine randomisierten Studien vor. Empfohlen wird der Einsatz von atypischen Neuroleptika, z.B. von Clozapin und Quetiapin (Potvin et al. 2006, San et al. 2007, Hanley et Kenna 2008).

Literatur

Hanley MJ, Kenna GA. Quetiapine: treatment for substance abuse and drug or abuse. *Am J Health Syst Pharm* 2008; 65: 611-618.

Petrakis I, Carroll KM, Nich C, Gordon L, Kosten T, Rounsaville B. Fluoxetine treatment of depressive disorders in methadone-maintained opioid addicts. *Drug Alcohol Depend* 1998; 50: 221-226.

Poling J, Przuinsky R, Kosten TR, Gonsai K, Sofuoglu M, Gonzalez G, Oliveto A. Clinical efficacy of citalopram alone or augmented with bupropion in methadone-stabilized patients. *Am J Addict* 2007; 16: 187-194.

Potvin S, Stip E, Lipp O, Elie R, Mancini-Marie A, Demers MF, Roy MA, Bouchard RH, Gendron A. Quetiapine in patients with comorbid schizophrenia-spectrum and substance use disorders: an open-label trial.

San L, Arranz B, Martinez-Raga J. Antipsychotic drug treatment of schizophrenic patients with substance abuse disorders. *Eur Addict Res* 2007; 13: 230-243.

Schreiber S, Peles E, Adelson M. Association between improvement in depression, reduced benzodiazepine (BZD) abuse, and increased psychotropic medication use in methadone maintenance treatment (MMT) patients. *Drug Alcohol Depend* 2008; 92: 79-85.

6

Welche Wechselwirkungen sind zu beachten?

Empfehlung

IVDA, die im Rahmen einer Substitutionsbehandlung antiretroviral behandelt werden, müssen engmaschig auf Entzugs- und/oder Intoxikationssymptome beobachtet werden (A).

Bei Auftreten von Entzugs- und/oder Intoxikationssymptomen muss die Dosis des Substitutionsmittels angepasst werden (A).

Konsens: Beide Sätze 100%

Erläuterung

Sowohl Methadon als auch Buprenorphin werden über das Cytochrom P450-System metabolisiert. Bei der HIV-Therapie müssen daher die Interaktionen von Methadon und Buprenorphin beachtet werden. Es kann zu Enzyminduktion und Enzyminhibition kommen. Je nachdem kann dies dazu führen, dass das eine Medikament überdosiert und das andere unterdosiert ist (Übersicht bei Klinker 2008, Tabelle 1 und 2). Vor allem die Wechselwirkungen zwischen Methadon und den beiden Nicht Nukleosidischen Reverse Transkriptase Inhibitoren (NNRTI) Efavirenz und Nevirapin müssen berücksichtigt werden. Pharmakologische und klinische Studien haben gezeigt, dass es zu einer deutlichen Wirkminderung von Methadon kommen kann (Altice et al. 1999, Ottero et al. 1999, Clarke et al. 2001, Marzolini et al. 2000, Clarke et al. 2001). Dadurch können nach wenigen Tagen Entzugssymptome entstehen. Um diese zu verhindern, muss die Methadondosis teilweise um bis zu 50% gesteigert werden (Ottero et al. 1999, Khara et al. 2007, Klinker 2008).

Tabelle 1:

Metabolismus von Opioid-Agonisten und antiretroviralen Substanzen (Klinker 2008)

Substanz	Kürzel	Metabolismus
Nukleosidische Reverse Transkriptase Inhibitoren	NRTI	
Abacavir, Azidothymidin, Didanosin, Efavirenz, Lamivudin, Stavudin, Tenofovir	ABC, AZT, DDI, FTC, 3TC, D4T, TDF	Glucuronidierung, renale Elimination, unwesentliche Beteiligung mikrosomaler Enzyme
Nicht Nukleosidische Reverse Transkriptase Inhibitoren	NNRTI	
Efavirenz	EFV	CYP3A4, CYP2B6
Nevirapin	NVP	CYP3A4, CYP2B6, CYP2D6
Protease-Inhibitoren	PI	
Atazanavir	ATV	CYP3A4
Darunavir	DRV	CYP3A4
Fosamprenavir	FPV	CYP3A4
Indinavir	IDV	CYP3A4
Lopinavir	LPV	CYP3A4
Saquinavir	SQV	CYP3A4
Ritonavir	RTV	CYP3A4, CYP2D6
Tipranavir	TPV	CYP3A4
Fusions-Inhibitoren	FI	
Enfuvirtide		Desaminierung
CCR5-Korezeptor-Inhibitoren	CCR5-I	
Maraviroc		CYP3A4, CYP2C9, CYP2C19, CYP2D6
Integrase-Inhibitoren	II	

Raltegravir		Glucuronidierung (UGT1A1)
Opioid-Agonisten		
Methadon		CYP3A4, CYP2B6, CYP2C8, CYP2C19, CYP2D6
Buprenorphin	BUP	CYP3A4

Tabelle 2:

Interaktionen zwischen antiretroviralen Wirksubstanzen und Opioid-Aganisten

(∅ = kein Effekt, n. u. = nicht untersucht, C_{max} = maximale Konzentration, AUC = Area under Curve = Fläche unter der Konzentrations-Zeit-Kurve, NRTI = Nukleosidischer Reverse Transkriptase Inhibitor, NNRTI = Nicht Nukleosidischer Reverse Transkriptase Inhibitor, PI = Protease-Inhibitor, FI = Fusions-Inhibitor, CCR5-I = CCR5-Korezeptor-Inhibitor, II = Integrase-Inhibitor) (Klinker 2008)

ART-Substanz	Effekt auf Methadon	Effekt auf BUP	Effekt auf ART-Substanz	Kommentar
NRTI				
Abacavir	Clearance ↑	n. u.	C _{max} ↓	Ursache?, keine klinische Relevanz
Azidothymidin	∅	∅	AUC ↑ 40%	Evtl. erhöhte AZT-Toxizität
Didanosin	∅	n. u.	AUC ↓ 37%	Eher keine klinische Relevanz
Emcitricitabin	n. u.	n. u.	n. u.	
Lamivudin	∅	n. u.	n. u.	
Stavudin	∅	n. u.	AUC ↓ 23%	Keine klinische Relevanz
Tenofovir	∅	n. u.	n. u.	
NNRTI				
Efavirenz	AUC ↓ 57%	AUC ↓ 50%	n. u.	Methadon: Oft Entzugssymptome, Dosiserhöhung notwendig BUP: Entzugssymptome selten
Nevirapin	AUC ↓ 46%	n. u.	∅	Methadon: Oft Entzugssymptome, Dosiserhöhung notwendig
PI				
Atazanavir	∅	AUC ↑ signifikant	n. u.	BUP: Überdosierungserscheinungen möglich, ggf. BUP-Dosierung ↓ Keine klinische Relevanz
Darunavir	Methadon- Konz. ↓ 16%	n. u.	n. u.	
Fosamprenavir	n. u.	n. u.	n. u.	
Indinavir	Widersprüchliche Daten	n. u.	C _{max} ↓ 16-28%	Eher keine klinische Relevanz
Lopinavir	Methadon-Konz. ↓ 40%	Kein signifikanter Effekt	n. u.	Methadon: Entzugssymptome möglich, ggf. Dosiserhöhung
Saquinavir	AUC ↓ 20-32%	n. u.	n. u.	Eher keine klinische Relevanz
Ritonavir	Widersprüchliche Daten	AUC ↑ signifikant	n. u.	BUP: Überdosierungserscheinungen möglich, ggf. BUP-Dosierung ↓
Tipranavir	Methadon-Konz. ↓ 50%	n. u.	n. u.	Methadon: Entzugssymptome möglich, ggf. Dosiserhöhung
FI				
Enfuvirtide	n. u.	n. u.	n. u.	
CCR5-I				

Maraviroc	n. u.	n. u.	n. u.	Interaktionen nicht auszuschließen
II				
Raltegravir	n. u.	n. u.	n. u.	

Literatur

Altice FL, Friedland GH, Cooney EL. Nevirapine induced opiate withdrawal among injection drug users with HIV infection receiving methadone. AIDS 1999; 13: 957-962

Clarke SM, Mulcahy FM, Tjia J et al.. The pharmacokinetics of methadone in HIV-positive patients receiving the non-nucleoside reverse transcriptase inhibitor efavirenz. Br J Clin Pharmacol 2001; 51: 213-217

Khara M, McLean M, Duncan F et al.. Methadone dosing strategies in HIV-infected injection drug users enrolled in a directly observed therapy program. J AIDS 2007; 45: 324-327.

Klinker H. Wechselwirkungen zwischen antiretroviraler Therapie (ART) und Substitutionsmedikamenten. Suchtmed 2008; 10 (S1): in Druck.

Marzolini C, Troillet N, Telenti A et al.. Efavirenz decreases methadone blood concentrations. AIDS 2000; 14: 1291

Ottero MJ, Fuertes A, Sanchez R et al.. Nevirapine-induced withdrawal symptoms in HIV patients on methadone maintenance programme: an alert. AIDS 1999; 13: 1004-1005

7

Gibt es speziell zu beachtende Nebenwirkungen?

Empfehlung

Die frühen Nebenwirkungen sind bei der Therapie von IVDU ähnlich wie bei anderen Patienten zu erwarten (C).

Die Hepatotoxizität verschiedener HIV-Medikamente muss vor allem bei den sehr häufig HCV-koinfizierten IVDU berücksichtigt werden (C).

Konsensus: 1. Satz 95,8%, 2. Satz 100%.

Erläuterung

Generell wurde in den letzten Jahren darauf geachtet, die Nebenwirkungen zu therapieren um die Adhärenz zu erhöhen. 90% der HIV-infizierten IVDU sind HCV-koinfiziert. (). Ob bestimmte Medikamente wie zum Beispiel Nevirapin oder aber die HIV-Therapie insgesamt die Progression einer Leberfibrose bei HIV/HCV –infizierten Patienten begünstigt, unbeeinflusst lässt oder aber verhindert, wird in der wissenschaftlichen Literatur noch kontrovers diskutiert (Macias et al. 2006, Berenger et al. 2008, Macias et al. 2004, Qurishi et al. 2003). Zu berücksichtigen ist, dass die HCV-bedingte Mortalität bei guter Behandlung der HIV-Infektion bei IVDU in den Vordergrund rückt ().

Literatur

Reference List

Aceijas C, Oppenheimer E, Stimson GV, Ashcroft RE, Matic S, Hickman M. Antiretroviral treatment for injecting drug users in developing and transitional countries 1 year before the end of the "Treating 3 million by 2005. Making it happen. The WHO strategy" ("3 by 5"). *Addiction* 2006; 101(9):1246-1253.

al-Haddad MK, Khashaba AS, Baig BZ, Khalfan S. HIV antibodies among intravenous drug users in Bahrain. *J Commun Dis* 1994; 26(3):127-132.

Alexander CS, Dong W, Schechter MT et al. Prevalence of primary HIV drug resistance among seroconverters during an explosive outbreak of HIV infection among injecting drug users. *AIDS* 1999; 13(8):981-985.

Aloisi MS, Serraino D, Girardi E et al. Sexual behaviour of women living with HIV/AIDS naive for antiretroviral therapy: the ICONA-BEHEPI Study. *AIDS Care* 2000; 12(6):789-795.

Altice FL, Friedland GH, Cooney EL. Nevirapine induced opiate withdrawal among injection drug users with HIV infection receiving methadone. *AIDS* 1999; 13(8):957-962.

Altice FL, Springer S, Buitrago M, Hunt DP, Friedland GH. Pilot study to enhance HIV care using needle exchange-based health services for out-of-treatment injecting drug users. *J Urban Health* 2003; 80(3):416-427

Altice FL, Springer S, Buitrago M, Hunt DP, Friedland GH. Pilot study to enhance HIV care using needle exchange-based health services for out-of-treatment injecting drug users. *J Urban Health* 2003; 80(3):416-427.

Altice FL, Springer S, Buitrago M, Hunt DP, Friedland GH. Pilot study to enhance HIV care using needle exchange-based health services for out-of-treatment injecting drug users. *J Urban Health* 2003; 80(3):416-427.

Altice FL, Springer S, Buitrago M, Hunt DP, Friedland GH. Pilot study to enhance HIV care using needle exchange-based health services for out-of-treatment injecting drug users. *J Urban Health* 2003; 80(3):416-427.

Altice FL, Springer S, Buitrago M, Hunt DP, Friedland GH. Pilot study to enhance HIV care using needle exchange-based health services for out-of-treatment injecting drug users. *J Urban Health* 2003; 80(3):416-427.

Altice FL, Springer S, Buitrago M, Hunt DP, Friedland GH. Pilot study to enhance HIV care using needle exchange-based health services for out-of-treatment injecting drug users. *J Urban Health* 2003; 80(3):416-427.

Amin J, Kaye M, Skidmore S, Pillay D, Cooper DA, Dore GJ. HIV and hepatitis C coinfection within the CAESAR study. *HIV Med* 2004; 5(3):174-179.

Amundsen EJ, Fekjaer H. Progression to AIDS slowed even more after the first two years with highly active antiretroviral therapy. *Scand J Public Health* 2003; 31(4):312-318.

Antela A. Access to antiretroviral therapy in HIV-infected injection drug users. *AIDS* 2001; 15(13):1727-1728.

Arango JC, Simmonds P, Brettelle RP, Bell JE. Does drug abuse influence the microglial response in AIDS and HIV encephalitis? *AIDS* 2004; 18 Suppl 1:S69-S74.

- (16) Arici C, Ripamonti D, Maggiolo F et al. Factors associated with the failure of HIV-positive persons to return for scheduled medical visits. *HIV Clin Trials* 2002; 3(1):52-57.
- (17) Atun RA, Lebcir R, Drobniowski F, Coker RJ. Impact of an effective multidrug-resistant tuberculosis control programme in the setting of an immature HIV epidemic: system dynamics simulation model. *Int J STD AIDS* 2005; 16(8):560-570.
- (18) Backmund M. [Illegal drug users and risk factors for HIV and HCV infection]. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 2007; 50(4): 471-475.
- (19) Backus LI, Boothroyd D, Deyton LR. HIV, hepatitis C and HIV/hepatitis C virus co-infection in vulnerable populations. *AIDS* 2005; 19 Suppl 3:S13-S19.
- (20) Baker A, Heather N, Wodak A, Dixon J, Holt P. Evaluation of a cognitive-behavioural intervention for HIV prevention among injecting drug users. *AIDS* 1993; 7(2): 247-256.
- (21) Balode D, Ferdats A, Dievberna I et al. Rapid epidemic spread of HIV type 1 subtype A1 among intravenous drug users in Latvia and slower spread of subtype B among other risk groups. *AIDS Res Hum Retroviruses* 2004; 20(2):245-249.
- (22) Bassani S, Toro C, Jimenez V, Rodes B, Soriano V. Can the level of immunosuppression in human immunodeficiency virus-infected patients affect the reliability of human T-cell lymphotropic virus type 2 serological diagnosis? *Clin Vaccine Immunol* 2006; 13(1): 160-161.
- (23) Bassetti S, Battegay M, Furrer H et al. Why is highly active antiretroviral therapy (HAART) not prescribed or discontinued? Swiss HIV Cohort Study. *J Acquir Immune Defic Syndr* 1999; 21(2):114-119.
- (24) Battegay M, Bucher HC, Vernazza P. Sexual risk behavior in HIV-infected injection drug users. *Clin Infect Dis* 2004; 38(8):1175-1177.
- (25) Batter V. Trends in HIV seroprevalence among patients with sexually transmitted diseases in 17 European sentinel networks, 1990-1996. European Study Group. *AIDS* 2000; 14(7):871-880.
- (26) Beatty LA, Jones DJ, Doctor L. Reducing HIV/AIDS and criminal justice involvement in African Americans as a consequence of drug abuse. *J Health Care Poor Underserved* 2005; 16(4 Suppl B):1-5.
- (27) Bittencourt AL. Vertical transmission of HTLV-I/II: a review. *Rev Inst Med Trop Sao Paulo* 1998; 40(4):245-251.
- (28) Blower S, Medley G. Epidemiology, HIV and drugs: mathematical models and data. *Br J Addict* 1992; 87(3):371-379.
- (29) Bobkov AF, Kazennova EV, Selimova LM et al. Temporal trends in the HIV-1 epidemic in Russia: predominance of subtype A. *J Med Virol* 2004; 74(2):191-196.
- (30) Bobrova N, Sarang A, Stuikyte R, Lezhentsev K. Obstacles in provision of anti-retroviral treatment to drug users in Central and Eastern Europe and Central Asia: a regional overview. *Int J Drug Policy* 2007; 18(4):313-318.
- (31) Bock J, Escobar-Pinzon LC, Riemer D, Blanch J, Hautzinger M. [EUROVIHTA Project--specific intervention program for HIV infected patients to support the coping process with this chronic illness]. *Psychother Psychosom Med Psychol* 2003; 53(7): 310-318.
- (32) Bogner JR, German AIDS Study Group. Observational analysis of German injecting drug users (IDU): survival with and without methadone maintenance treatment. German AIDS Study Group GASG/IdkF. *Eur J Med Res* 1996; 1(4):209-214.
- (33) Bouhnik AD, Moatti JP, Vlahov D, Gallais H, Dellamonica P, Obadia Y. Highly active antiretroviral treatment does not increase sexual risk behaviour among French HIV infected injecting drug users. *J Epidemiol Community Health* 2002; 56(5):349-353.
- (34) Bouhnik AD, Preau M, Vincent E et al. Depression and clinical progression in HIV-infected drug users treated with highly active antiretroviral therapy. *Antivir Ther* 2005; 10(1):53-61.

- (35) Braitstein P, Justice A, Bangsberg DR et al. Hepatitis C coinfection is independently associated with decreased adherence to antiretroviral therapy in a population-based HIV cohort. *AIDS* 2006; 20(3):323-331.
- (36) Brancato G, Pezzotti P, Rapiti E et al. Multiple imputation method for estimating incidence of HIV infection. The Multicenter Prospective HIV Study. *Int J Epidemiol* 1997; 26(5):1107-1114.
- (37) Breitbart W, Rosenfeld B, Passik S, Kaim M, Funesti-Esch J, Stein K. A comparison of pain report and adequacy of analgesic therapy in ambulatory AIDS patients with and without a history of substance abuse. *Pain* 1997; 72(1-2):235-243.
- (38) Breitbart W, Passik S, McDonald MV et al. Patient-related barriers to pain management in ambulatory AIDS patients. *Pain* 1998; 76(1-2):9-16.
- (39) Brettle RP, McNeil AJ, Gore SM, Bird AG, Leen CS, Richardson A. The Edinburgh City Hospital cohort: analysis of enrollment, progression and mortality by baseline covariates. *QJM* 1995; 88(7):479-491.
- (40) Brettle RP, Chiswick A, Bell J et al. Pre-AIDS deaths in HIV infection related to intravenous drug use. *QJM* 1997; 90(10):617-629.
- (41) Britton CB. HIV infection. *Neurol Clin* 1993; 11(3):605-624.
- (42) Brodt HR, Staszewski S, Enzensberger R et al. [Epidemiology of tuberculosis in patients with HIV infection of the Frankfurt University Clinic]. *Med Klin (Munich)* 1993; 88(5):279-286.
- (43) Broome KM, Joe GW, Simpson DD. HIV risk reduction in outpatient drug abuse treatment: individual and geographic differences. *AIDS Educ Prev* 1999; 11(4):293-306.
- (44) Brown AJ, Lobidel D, Wade CM et al. The molecular epidemiology of human immunodeficiency virus type 1 in six cities in Britain and Ireland. *Virology* 1997; 235(1):166-177.
- (45) Brown LS, Jr., Kritz SA, Goldsmith RJ et al. Characteristics of substance abuse treatment programs providing services for HIV/AIDS, hepatitis C virus infection, and sexually transmitted infections: the National Drug Abuse Treatment Clinical Trials Network. *J Subst Abuse Treat* 2006; 30(4):315-321.
- (46) Bruce RD, Dvoryak S, Sylla L, Altice FL. HIV treatment access and scale-up for delivery of opiate substitution therapy with buprenorphine for IDUs in Ukraine--programme description and policy implications. *Int J Drug Policy* 2007; 18(4):326-328.
- (47) Burbano X, Miguez MJ, Lecusay R et al. Thrombocytopenia in HIV-infected drug users in the HAART era. *Platelets* 2001; 12(8):456-461.
- (48) Burns MJ, Feaster DJ, Mitrani VB, Ow C, Szapocznik J. Stress processes in HIV-positive African American mothers: moderating effects of drug abuse history. *Anxiety Stress Coping* 2008; 21(1):95-116.
- (49) Burruano L, Seydel J. [The spread of HIV/AIDS in Ukraine]. *Gesundheitswesen* 2006; 68(8-9):571-574.
- (50) Carneiro M, Yu XF, Lyles C et al. The effect of drug-injection behavior on genetic evolution of HIV-1. *J Infect Dis* 1999; 180(4):1025-1032.
- (51) Carrieri MP, Vlahov D, Dellamonica P et al. Use of buprenorphine in HIV-infected injection drug users: negligible impact on virologic response to HAART. The Manif-2000 Study Group. *Drug Alcohol Depend* 2000; 60(1):51-54.
- (52) Carrieri MP, Chesney MA, Spire B et al. Failure to maintain adherence to HAART in a cohort of French HIV-positive injecting drug users. *Int J Behav Med* 2003; 10(1):1-14.
- (53) Carrieri MP, Villes V, Raffi F et al. Self-reported side-effects of anti-retroviral treatment among IDUs: a 7-year longitudinal study (APROCO-COPILOTE COHORT ANRS CO-8). *Int J Drug Policy* 2007; 18(4):288-295.
- (54) Castilla J, Gutierrez A, Guerra L et al. Pulmonary and extrapulmonary tuberculosis at AIDS diagnosis in Spain: epidemiological differences and implications for control. *AIDS* 1997; 11(13):1583-1588.

- (55) Castilla J, Lorenzo JM, Izquierdo A et al. Characteristics and trends of newly diagnosed HIV-infections, 2000-2004. *Gac Sanit* 2006; 20(6):442-448.
- (56) Ceballos-Salobrena A, Gaitan-Cepeda LA, Ceballos-Garcia L, Lezama-Del VD. Oral lesions in HIV/AIDS patients undergoing highly active antiretroviral treatment including protease inhibitors: a new face of oral AIDS? *AIDS Patient Care STDS* 2000; 14(12): 627-635.
- (57) Celentano DD, Jittiwutikorn J, Hodge MJ, Beyrer C, Nelson KE. Epidemiology of HIV-1 infection in opiate users in Northern Thailand. *J Acquir Immune Defic Syndr Hum Retrovirol* 1998; 17(1):73-78.
- (58) Celentano DD, Vlahov D, Cohn S, Shadle VM, Obasanjo O, Moore RD. Self-reported antiretroviral therapy in injection drug users. *JAMA* 1998; 280(6):544-546.
- (59) Celentano DD, Galai N, Sethi AK et al. Time to initiating highly active antiretroviral therapy among HIV-infected injection drug users. *AIDS* 2001; 15(13):1707-1715.
- (60) Celentano DD. Mortality among urban drug users and the impact of highly active antiretroviral therapy. *Clin Infect Dis* 2005; 41(6):873-874.
- (61) Chan KY, Yang Y, Zhang KL, Reidpath DD. Disentangling the stigma of HIV/AIDS from the stigmas of drugs use, commercial sex and commercial blood donation - a factorial survey of medical students in China. *BMC Public Health* 2007; 7(1):280.
- (62) Chan KY, Reidpath DD. Stigmatization of patients with AIDS: understanding the interrelationships between 'Thai nurses' attitudes toward HIV/AIDS, drug use, and commercial sex. *AIDS Patient Care STDS* 2007; 21(10):763-775.
- (63) Chan KY, Stooze MA, Sringerinyuang L, Reidpath DD. Stigmatization of AIDS Patients: Disentangling Thai Nursing Students' Attitudes Towards HIV/AIDS, Drug Use, and Commercial Sex. *AIDS Behav* 2007.
- (64) Chan PA, Khan OA. Risk factors for HIV infection in males who have sex with males (MSM) in Bangladesh. *BMC Public Health* 2007; 7:153.
- (65) Chen RY, Westfall AO, Mugavero MJ et al. Duration of highly active antiretroviral therapy regimens. *Clin Infect Dis* 2003; 37(5):714-722.
- (66) Clarke S, Delamere S, McCullough L, Hopkins S, Bergin C, Mulcahy F. Assessing limiting factors to the acceptance of antiretroviral therapy in a large cohort of injecting drug users. *HIV Med* 2003; 4(1):33-37.
- (67) Clarke SM, Mulcahy FM, Tjia J et al. The pharmacokinetics of methadone in HIV-positive patients receiving the non-nucleoside reverse transcriptase inhibitor efavirenz. *Br J Clin Pharmacol* 2001; 51(3):213-217.
- (68) Cohn JA. HIV-1 infection in injection drug users. *Infect Dis Clin North Am* 2002; 16(3):745-770.
- (69) Compton WM, Cottler LB, Ben-Abdallah A, Cunningham-Williams R, Spitznagel EL. The effects of psychiatric comorbidity on response to an HIV prevention intervention. *Drug Alcohol Depend* 2000; 58(3):247-257.
- (70) Contoreggi C, Rexroad VE, Lange WR. Current management of infectious complications in the injecting drug user. *J Subst Abuse Treat* 1998; 15(2):95-106.
- (71) Conway B, Grebely J, Tossonian H, Lefebvre D, de VS. A systematic approach to the treatment of HIV and hepatitis C virus infection in the inner city: a Canadian perspective. *Clin Infect Dis* 2005; 41 Suppl 1:S73-S78.
- (72) Cornelisse PG, Montessori V, Yip B et al. The impact of zidovudine on dementia-free survival in a population of HIV-positive men and women on antiretroviral therapy. *Int J STD AIDS* 2000; 11(1):52-56.
- (73) Crothers K, Butt AA, Gibert CL, Rodriguez-Barradas MC, Crystal S, Justice AC. Increased COPD among HIV-positive compared to HIV-negative veterans. *Chest* 2006; 130(5):1326-1333.
- (74) D'Aunno T, Vaughn TE, McElroy P. An institutional analysis of HIV prevention efforts by the nation's outpatient drug abuse treatment units. *J Health Soc Behav* 1999; 40(2):175-192.

- (75) Davis RF, Metzger DS, Meyers K et al. Long-term changes in psychological symptomatology associated with HIV serostatus among male injecting drug users. *AIDS* 1995; 9(1):73-79.
- (76) Deb T, Singh TY, Singh NB, Sharma MB, Debbarma A. Multiple tubercular ulcer perforation of ileum in an AIDS patient: case report. *J Commun Dis* 1998; 30(3): 175-178.
- (77) del AJ, del RJ, Barrasa A et al. Factors influencing HIV progression in a seroconverter cohort in Madrid from 1985 to 1999. *Sex Transm Infect* 2002; 78(4):255-260.
- (78) Deng R, Li J, Sringeriyuang L, Zhang K. Drug abuse, HIV/AIDS and stigmatisation in a Dai community in Yunnan, China. *Soc Sci Med* 2007; 64(8):1560-1571.
- (79) Depont F, Vargas F, Dutronc H et al. Drug-drug interactions with systemic antifungals in clinical practice. *Pharmacoepidemiol Drug Saf* 2007; 16(11):1227-1233.
- (80) Dewan PK, Grinsdale J, Liska S, Wong E, Fallstad R, Kawamura LM. Feasibility, acceptability, and cost of tuberculosis testing by whole-blood interferon-gamma assay. *BMC Infect Dis* 2006; 6:47.
- (81) Di M, V, Thevenot T, Boyer N et al. HIV coinfection does not compromise liver histological response to interferon therapy in patients with chronic hepatitis C. *AIDS* 2002; 16(3):441-445.
- (82) Donoghoe MC, Bollerup AR, Lazarus JV, Nielsen S, Matic S. Access to highly active antiretroviral therapy (HAART) for injecting drug users in the WHO European Region 2002-2004. *Int J Drug Policy* 2007; 18(4):271-280.
- (83) Doran TI. Factors contributing to delayed diagnosis of HIV-infected women and their children in south Texas. *Pediatr AIDS HIV Infect* 1995; 6(2):91-96.
- (84) Dorrucci M, Pezzotti P, Phillips AN, Alliegro MB, Rezza G. Antiretroviral treatment and progression to AIDS in HIV seroconverters from different risk groups. *HIV Italian Seroconversion Study. AIDS* 1997; 11(4):461-467.
- (85) Dragsted UB, Mocroft A, Vella S et al. Predictors of immunological failure after initial response to highly active antiretroviral therapy in HIV-1-infected adults: a EuroSIDA study. *J Infect Dis* 2004; 190(1):148-155.
- (86) Drobniowski FA, Balabanova YM, Ruddy MC et al. Tuberculosis, HIV seroprevalence and intravenous drug abuse in prisoners. *Eur Respir J* 2005; 26(2):298-304.
- (87) Dronda F, Zamora J, Moreno S et al. CD4 cell recovery during successful antiretroviral therapy in naive HIV-infected patients: the role of intravenous drug use. *AIDS* 2004; 18(16):2210-2212.
- (88) Duran S, Solas C, Spire B et al. 'Do HIV-infected injecting drug users over-report adherence to highly active antiretroviral therapy?' A comparison between patients' self-reports and serum protease inhibitor concentrations in the French Manif 2000 cohort study. *AIDS* 2001; 15(8):1075-1077.
- (89) Ebert FW. [Axillary plexus catheter block in accidental intra-arterial levomethadone HCl injection in an HIV-positive, hepatitis B and C active drug dependent patient]. *Handchir Mikrochir Plast Chir* 2000; 32(3):197-201.
- (90) Ebrahim SH, Peterman TA, Zaidi AA, Hamers FF. Geography of AIDS-associated Kaposi's sarcoma in Europe. *AIDS* 1997; 11(14):1739-1745.
- (91) Egea JM, Muga R, Sirera G et al. Initiation, changes in use and effectiveness of highly active anti-retroviral therapy in a cohort of injecting drug users. *Epidemiol Infect* 2002; 129(2):325-333.
- (92) Ehrenstein V, Horton NJ, Samet JH. Inconsistent condom use among HIV-infected patients with alcohol problems. *Drug Alcohol Depend* 2004; 73(2):159-166.
- (93) El-Bassel N, Gilbert L, Rajah V. The relationship between drug abuse and sexual performance among women on methadone. Heightening the risk of sexual intimate violence and HIV. *Addict Behav* 2003; 28(8):1385-1403.
- (94) Ellis RJ, Childers ME, Cherner M, Lazzaretto D, Letendre S, Grant I. Increased human immunodeficiency virus loads in active methamphetamine users are explained by reduced effectiveness of antiretroviral therapy. *J Infect Dis* 2003; 188(12):1820-1826.

- (95) Estrada AL. Health disparities among African-American and Hispanic drug injectors--HIV, AIDS, hepatitis B virus and hepatitis C virus: a review. *AIDS* 2005; 19 Suppl 3:S47-S52.
- (96) Eustace JA, Gregory PC, Krishnan M et al. Influence of intravenous drug abuse on vascular access placement and survival in HIV-seropositive patients. *Nephron Clin Pract* 2005; 100(2):c38-c45.
- (97) Eyzaguirre L, Brouwer KC, Nadai Y et al. First molecular surveillance report of HIV type 1 in injecting drug users and female sex workers along the U.S.-Mexico border. *AIDS Res Hum Retroviruses* 2007; 23(2):331-334.
- (98) Fallo AA, Dobrzanski Nisiewicz W, Sordelli N, Cattaneo MA, Scott G, Lopez EL. Clinical and epidemiologic aspects of human immunodeficiency virus-1-infected children in Buenos Aires, Argentina. *Int J Infect Dis* 2002; 6(1):9-16.
- (99) Farley JL, Mitty JA, Lally MA et al. Comprehensive medical care among HIV-positive incarcerated women: the Rhode Island experience. *J Womens Health Gend Based Med* 2000; 9(1):51-56.
- (100) Fingerhood M, Rastegar DA, Jasinski D. Five year outcomes of a cohort of HIV-infected injection drug users in a primary care practice. *J Addict Dis* 2006; 25(2):33-38.
- (101) Fiscus SA, Kelly WF, Battigelli DA et al. Hepatitis C virus seroprevalence in clients of sexually transmitted disease clinics in North Carolina. *Sex Transm Dis* 1994; 21(3):155-160.
- (102) Floris-Moore M, Lo Y, Klein RS et al. Gender and hospitalization patterns among HIV-infected drug users before and after the availability of highly active antiretroviral therapy. *J Acquir Immune Defic Syndr* 2003; 34(3):331-337.
- (103) Fordyce EJ, Blum S, Shum R, Singh TP, Chiasson MA, Thomas P. The changing AIDS epidemic in New York City: a descriptive birth cohort analysis of AIDS incidence and age at diagnosis. *AIDS* 1995; 9(6):605-610.
- (104) Forrester JE, Woods MN, Knox TA, Spiegelman D, Skinner SC, Gorbach SL. Body composition and dietary intake in relation to drug abuse in a cohort of HIV-positive persons. *J Acquir Immune Defic Syndr* 2000; 25 Suppl 1:S43-S48.
- (105) Forrester JE, Tucker KL, Gorbach SL. The effect of drug abuse on body mass index in Hispanics with and without HIV infection. *Public Health Nutr* 2005; 8(1):61-68.
- (106) Fuller CM, Absalon J, Ompad DC et al. A comparison of HIV seropositive and seronegative young adult heroin- and cocaine-using men who have sex with men in New York City, 2000-2003. *J Urban Health* 2005; 82(1 Suppl 1):i51-i61.
- (107) Galai N, Vlahov D, Bareta JC, Wang C, Cohn S, Sterling TR. Prognostic factors for survival differ according to CD4+ cell count among HIV-infected injection drug users: pre-HAART and HAART eras. *J Acquir Immune Defic Syndr* 2005; 38(1):74-81.
- (108) Garcia de la HM, Ferreros I, del AJ et al. Gender differences in progression to AIDS and death from HIV seroconversion in a cohort of injecting drug users from 1986 to 2001. *J Epidemiol Community Health* 2004; 58(11):944-950.
- (109) Gayet-Ageron A, Baratin D, Marceillac E et al. The AIDS epidemic in Lyon: patient characteristics and defining illnesses between 1985 and 2000. *HIV Med* 2004; 5(3):163-170.
- (110) Gebo KA, ener-West M, Moore RD. Hospitalization rates differ by hepatitis C status in an urban HIV cohort. *J Acquir Immune Defic Syndr* 2003; 34(2):165-173.
- (111) Gebo KA, Fleishman JA, Moore RD. Hospitalizations for metabolic conditions, opportunistic infections, and injection drug use among HIV patients: trends between 1996 and 2000 in 12 states. *J Acquir Immune Defic Syndr* 2005; 40(5):609-616.
- (112) Gebo KA, Burkey MD, Lucas GM, Moore RD, Wilson LE. Incidence of, risk factors for, clinical presentation, and 1-year outcomes of infective endocarditis in an urban HIV cohort. *J Acquir Immune Defic Syndr* 2006; 43(4):426-432.

- (113) Gerber JG, Rosenkranz S, Segal Y et al. Effect of ritonavir/saquinavir on stereoselective pharmacokinetics of methadone: results of AIDS Clinical Trials Group (ACTG) 401. *J Acquir Immune Defic Syndr* 2001; 27(2):153-160.
- (114) Girardi E, Aloisi MS, Serraino D et al. Sexual behaviour of heterosexual individuals with HIV infection naive for antiretroviral therapy in Italy. *Sex Transm Infect* 2001; 77(2):130-134.
- (115) Girardi E, Palmieri F, Cingolani A et al. Changing clinical presentation and survival in HIV-associated tuberculosis after highly active antiretroviral therapy. *J Acquir Immune Defic Syndr* 2001; 26(4):326-331.
- (116) Gjeruldsen SR, Myrvang B, Opjordsmoen S. A 25-year follow-up study of drug addicts hospitalised for acute hepatitis: present and past morbidity. *Eur Addict Res* 2003; 9(2):80-86.
- (117) Golz J. [Prevention of HIV in injecting drug addicts. What has been done - what could be better?]. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 2007; 50(4):465-470.
- (118) Golz JH. [HIV and drug users: current trends]. *MMW Fortschr Med* 2005; 147 Spec No 1:60-62.
- (119) Gordon SM, Thompson S. The changing epidemiology of human immunodeficiency virus infection in older persons. *J Am Geriatr Soc* 1995; 43(1):7-9.
- (120) Grassi MP, Perin C, Clerici F et al. Effects of HIV seropositivity and drug abuse on cognitive function. *Eur Neurol* 1997; 37(1):48-52.
- (121) Greenberg B, Berkman A, Thomas R et al. Evaluating supervised HAART in late-stage HIV among drug users: a preliminary report. *J Urban Health* 1999; 76(4):468-480.
- (122) Griffin KW, Botvin GJ, Nichols TR. Effects of a school-based drug abuse prevention program for adolescents on HIV risk behavior in young adulthood. *Prev Sci* 2006; 7(1):103-112.
- (123) Hahn JA, Page-Shafer K, Ford J, Paciorek A, Lum PJ. Traveling young injection drug users at high risk for acquisition and transmission of viral infections. *Drug Alcohol Depend* 2007.
- (124) Harzke AJ, Williams ML, Nilsson-Schonnesson L, Ross MW, Timpson S, Keel KB. Psychosocial factors associated with adherence to antiretroviral medications in a sample of HIV-positive African American drug users. *AIDS Care* 2004; 16(4):458-470.
- (125) Haverkos HW. HIV/AIDS and drug abuse: epidemiology and prevention. *J Addict Dis* 1998; 17(4):91-103.
- (126) Hengge UR, Franz B, Hoersch S, Goos M. Course of HIV disease does not depend on risk group: 7.5-year follow-up in 296 patients. *Int J STD AIDS* 2003; 14(7):451-457.
- (127) Herget G. Methadone and buprenorphine added to the WHO list of essential medicines. *HIV AIDS Policy Law Rev* 2005; 10(3):23-24.
- (128) Hernandez-Aguado I, Avino MJ, Perez-Hoyos S et al. Human immunodeficiency virus (HIV) infection in parenteral drug users: evolution of the epidemic over 10 years. Valencian Epidemiology and Prevention of HIV Disease Study Group. *Int J Epidemiol* 1999; 28(2):335-340.
- (129) Hierholzer J, Montano S, Hoelscher M et al. Molecular Epidemiology of HIV Type 1 in Ecuador, Peru, Bolivia, Uruguay, and Argentina. *AIDS Res Hum Retroviruses* 2002; 18(18):1339-1350.
- (130) Himelhoch S, Chander G, Fleishman JA, Hellinger J, Gaist P, Gebo KA. Access to HAART and utilization of inpatient medical hospital services among HIV-infected patients with co-occurring serious mental illness and injection drug use. *Gen Hosp Psychiatry* 2007; 29(6):518-525.
- (131) Hirschel B, Flepp M, Bucher HC et al. Switching from protease inhibitors to efavirenz: differences in efficacy and tolerance among risk groups: a case-control study from the Swiss HIV Cohort. *AIDS* 2002; 16(3):381-385.

- (132) Hoffmann M, Haller P, Bucher HC, Gyr N, Battegay M. [Hospitalizations in a cohort of 175 severely drug-addicted patients of a medically managed opiate withdrawal project]. *Schweiz Rundsch Med Prax* 2001; 90(48):2094-2101.
- (133) Houweling H, Hamers FF, Termorshuizen F, Gill ON, Jager JC, Coutinho RA. A birth cohort analysis of AIDS in Europe: high incidence among young persons at risk. *AIDS* 1998; 12(1):85-93.
- (134) Houweling H, Wiessing LG, Hamers FF, Termorshuizen F, Gill ON, Sprenger MJ. An age-period-cohort analysis of 50,875 AIDS cases among injecting drug users in Europe. *Int J Epidemiol* 1999; 28(6):1141-1148.
- (135) Howard AA, Klein RS, Schoenbaum EE. Association of hepatitis C infection and antiretroviral use with diabetes mellitus in drug users. *Clin Infect Dis* 2003; 36(10):1318-1323.
- (136) Iguchi MY. Drug abuse treatment as HIV prevention: changes in social drug use patterns might also reduce risk. *J Addict Dis* 1998; 17(4):9-18.
- (137) Isernhagen K. [Special problems of HIV-positive women who are either drug abusers or on methadone replacement therapy]. *Zentralbl Gynakol* 1999; 121(11):555-557.
- (138) Jarrin I, Lumbreras B, Ferreros I, Perez-Hoyos S, Hurtado I, Hernandez-Aguado I. Effect of education on overall and cause-specific mortality in injecting drug users, according to HIV and introduction of HAART. *Int J Epidemiol* 2007; 36(1):187-194.
- (139) Jenkins RA, Torugsa K, Markowitz LE et al. Willingness to participate in HIV-1 vaccine trials among young Thai men. *Sex Transm Infect* 2000; 76(5):386-392.
- (140) Joseph J, Stoff DM, van der HC. HIV/hepatitis C virus co-infection: basic, behavioral and clinical research in mental health and drug abuse. *AIDS* 2005; 19 Suppl 3:S3-S7.
- (141) Kahn JO, Martin JN, Roland ME et al. Feasibility of postexposure prophylaxis (PEP) against human immunodeficiency virus infection after sexual or injection drug use exposure: the San Francisco PEP Study. *J Infect Dis* 2001; 183(5):707-714.
- (142) Kalish ML, Baldwin A, Raktham S et al. The evolving molecular epidemiology of HIV-1 envelope subtypes in injecting drug users in Bangkok, Thailand: implications for HIV vaccine trials. *AIDS* 1995; 9(8):851-857.
- (143) Kaplan JE, Masur H, Holmes KK. Guidelines for preventing opportunistic infections among HIV-infected persons--2002. Recommendations of the U.S. Public Health Service and the Infectious Diseases Society of America. *MMWR Recomm Rep* 2002; 51(RR-8):1-52.
- (144) Kepler K, Stover H. [Transmission of infectious diseases during imprisonment--results of a study and introduction of a model project for infection prevention in Lower Saxony]. *Gesundheitswesen* 1999; 61(4):207-213.
- (145) Kerr T, Palepu A, Barnes G et al. Psychosocial determinants of adherence to highly active antiretroviral therapy among injection drug users in Vancouver. *Antivir Ther* 2004; 9(3):407-414.
- (146) Kerr T, Marshall A, Walsh J et al. Determinants of HAART discontinuation among injection drug users. *AIDS Care* 2005; 17(5):539-549.
- (147) King VL, Kidorf MS, Stoller KB, Brooner RK. Influence of psychiatric comorbidity on HIV risk behaviors: changes during drug abuse treatment. *J Addict Dis* 2000; 19(4):65-83.
- (148) Kitayaporn D, Tansuphaswadikul S, Lohsomboon P et al. Survival of AIDS patients in the emerging epidemic in Bangkok, Thailand. *J Acquir Immune Defic Syndr Hum Retrovirol* 1996; 11(1):77-82.
- (149) Kivela P, Krol A, Simola S et al. HIV outbreak among injecting drug users in the Helsinki region: social and geographical pockets. *Eur J Public Health* 2007; 17(4):381-386.

- (150) Klein MB, Lalonde RG, Suissa S. The impact of hepatitis C virus coinfection on HIV progression before and after highly active antiretroviral therapy. *J Acquir Immune Defic Syndr* 2003; 33(3):365-372.
- (151) Klinkenberg WD, Sacks S. Mental disorders and drug abuse in persons living with HIV/AIDS. *AIDS Care* 2004; 16 Suppl 1:S22-S42.
- (152) Klitzman RL, Kirshenbaum SB, Dodge B et al. Intricacies and inter-relationships between HIV disclosure and HAART: a qualitative study. *AIDS Care* 2004; 16(5):628-640.
- (153) Knowlton A, Arnsten J, Eldred L et al. Individual, interpersonal, and structural correlates of effective HAART use among urban active injection drug users. *J Acquir Immune Defic Syndr* 2006; 41(4):486-492.
- (154) Kohli R, Lo Y, Howard AA et al. Mortality in an urban cohort of HIV-infected and at-risk drug users in the era of highly active antiretroviral therapy. *Clin Infect Dis* 2005; 41(6):864-872.
- (155) Kourbatova EV, Borodulin BE, Borodulina EA, del RC, Blumberg HM, Leonard MK, Jr. Risk factors for mortality among adult patients with newly diagnosed tuberculosis in Samara, Russia. *Int J Tuberc Lung Dis* 2006; 10(11):1224-1230.
- (156) Kral AH, Lorvick J, Ciccarone D et al. HIV prevalence and risk behaviors among men who have sex with men and inject drugs in San Francisco. *J Urban Health* 2005; 82(1 Suppl 1):i43-i50.
- (157) Kuhlmann T, Hasse HE, Sawalies D. [Qualified inpatient acute treatment of drug dependent patients in North Rhine Westphalia]. *Psychiatr Prax* 1994; 21(1):13-18.
- (158) Kuhlmann T. [Harm reduction--on the paradigm changes in drug dependence treatment]. *Psychiatr Prax* 1996; 23(4):157-160.
- (159) Kuljis RO, Shapshak P, Alcabes P, Rodriguez dl, V, Fujimura R, Petito CK. Increased density of neurons containing NADPH diaphorase and nitric oxide synthase in the cerebral cortex of patients with HIV-1 infection and drug abuse. *J NeuroAIDS* 2002; 2(3):19-36.
- (160) Laeyendecker O, Zhang GW, Quinn TC et al. Molecular epidemiology of HIV-1 subtypes in southern China. *J Acquir Immune Defic Syndr* 2005; 38(3):356-362.
- (161) Laine C, Zhang D, Hauck WW, Turner BJ. HIV-1 RNA viral load monitoring in HIV-infected drug users on antiretroviral therapy: relationship with outpatient care patterns. *J Acquir Immune Defic Syndr* 2002; 29(3):270-274.
- (162) Land S, McGavin C, Lucas R, Birch C. Incidence of zidovudine-resistant human immunodeficiency virus isolated from patients before, during, and after therapy. *J Infect Dis* 1992; 166(5):1139-1142.
- (163) Latkin CA. Outreach in natural settings: the use of peer leaders for HIV prevention among injecting drug users' networks. *Public Health Rep* 1998; 113 Suppl 1:151-159.
- (164) Lazouskaya NV, Eremin VF, Adema KW, Gasich EL, Baan E, Lukashov VV. The HIV type 1 epidemic in Belarus: predominance of Eastern European subtype A strains and circulation of subtype B viruses. *AIDS Res Hum Retroviruses* 2005; 21(9):830-833.
- (165) Le M, V, Rabaud C, Journot V et al. Incidence and risk factors of bacterial pneumonia requiring hospitalization in HIV-infected patients started on a protease inhibitor-containing regimen. *HIV Med* 2006; 7(4):261-267.
- (166) Lee LM, Fleming PL. Trends in human immunodeficiency virus diagnoses among women in the United States, 1994-1998. *J Am Med Womens Assoc* 2001; 56(3):94-99.
- (167) Lem M, Moore D, Marion S et al. Back to work: correlates of employment among persons receiving highly active antiretroviral therapy. *AIDS Care* 2005; 17(6):740-746.

- (168) Liitsola K, Tashkinova I, Laukkanen T et al. HIV-1 genetic subtype A/B recombinant strain causing an explosive epidemic in injecting drug users in Kaliningrad. *AIDS* 1998; 12(14):1907-1919.
- (169) Lima VD, Kretz P, Palepu A et al. Aboriginal status is a prognostic factor for mortality among antiretroviral naive HIV-positive individuals first initiating HAART. *AIDS Res Ther* 2006; 3:14.
- (170) Lima VD, Hogg RS, Harrigan PR et al. Continued improvement in survival among HIV-infected individuals with newer forms of highly active antiretroviral therapy. *AIDS* 2007; 21(6):685-692.
- (171) Lincoln D, Petoumenos K, Dore GJ. HIV/HBV and HIV/HCV coinfection, and outcomes following highly active antiretroviral therapy. *HIV Med* 2003; 4(3): 241-249.
- (172) Lloyd-Smith E, Brodtkin E, Wood E et al. Impact of HAART and injection drug use on life expectancy of two HIV-positive cohorts in British Columbia. *AIDS* 2006; 20(3):445-450.
- (173) Lockemann U, Puschel K, Schneider V et al. Occurrence of HIV-antibodies among drug abuse-related fatalities in major European cities (up to December 31st, 1992). *Int J Legal Med* 1994; 107(1):55-56.
- (174) Losa JE, Miro JM, Del RA et al. Infective endocarditis not related to intravenous drug abuse in HIV-1-infected patients: report of eight cases and review of the literature. *Clin Microbiol Infect* 2003; 9(1):45-54.
- (175) Loughlin A, Metsch L, Gardner L, Anderson-Mahoney P, Barrigan M, Strathdee S. Provider barriers to prescribing HAART to medically-eligible HIV-infected drug users. *AIDS Care* 2004; 16(4):485-500.
- (176) Lucas GM, Chaisson RE, Moore RD. Highly active antiretroviral therapy in a large urban clinic: risk factors for virologic failure and adverse drug reactions. *Ann Intern Med* 1999; 131(2):81-87.
- (177) Lucas GM, Mullen BA, Weidle PJ, Hader S, McCaul ME, Moore RD. Directly administered antiretroviral therapy in methadone clinics is associated with improved HIV treatment outcomes, compared with outcomes among concurrent comparison groups. *Clin Infect Dis* 2006; 42(11):1628-1635.
- (178) Lukashov VV, Op de Coul EL, Coutinho RA, Goudsmit J. HIV-1 strains specific for Dutch injecting drug users in heterosexually infected individuals in The Netherlands. *AIDS* 1998; 12(6):635-641.
- (179) Lum PJ, Tulskey JP. The medical management of opioid dependence in HIV primary care settings. *Curr HIV/AIDS Rep* 2006; 3(4):195-204.
- (180) Lumberras B, Jarrin I, del AJ et al. Impact of hepatitis C infection on long-term mortality of injecting drug users from 1990 to 2002: differences before and after HAART. *AIDS* 2006; 20(1):111-116.
- (181) Lyon R, Haque AK, Asmuth DM, Woods GL. Changing patterns of infections in patients with AIDS: a study of 279 autopsies of prison inmates and nonincarcerated patients at a university hospital in eastern Texas, 1984-1993. *Clin Infect Dis* 1996; 23(2):241-247.
- (182) Mackenzie AR, Laing RB, Urbaniak SJ, Molyneaux PJ, Douglas JG, Smith CC. Epidemiology and outcome of HIV infection in North-East Scotland (1985-1997). *J Infect* 1999; 38(2):107-110.
- (183) Manfredi R, Sabbatani S, Agostini D. Trend of mortality observed in a cohort of drug addicts of the metropolitan area of Bologna, North-Eastern Italy, during a 25-year-period. *Coll Antropol* 2006; 30(3):479-488.
- (184) Marcellin F, Preau M, Ravaux I, Dellamonica P, Spire B, Carrieri MP. Self-reported fatigue and depressive symptoms as main indicators of the quality of life (QOL) of patients living with HIV and Hepatitis C: implications for clinical management and future research. *HIV Clin Trials* 2007; 8(5):320-327.

- (185) Marcus U. [15th International AIDS Conference in Bangkok-- AIDS in Asia has thousands of faces. 2: Transmission of HIV in especially effected regions and in especially at at risk groups]. *Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz* 2005; 48(4):483-497.
- (186) Mari-Dell'Olmo M, Rodriguez-Sanz M, Garcia-Olalla P et al. Individual and community-level effects in the socioeconomic inequalities of AIDS-related mortality in an urban area of southern Europe. *J Epidemiol Community Health* 2007; 61(3): 232-240.
- (187) Marimoutou C, Poizot-Martin I, Loundou AD, Cassuto JP, Obadia Y. [Causes of hospitalization and death in the MANIF 2000 cohort, composed of HIV-infected patients contaminated by intravenous drug use, 1995-1999]. *Presse Med* 2003; 32(13 Pt 1): 587-594.
- (188) Marins JR, Barros MB, Machado H, Chen S, Jamal LF, Hearst N. Characteristics and survival of AIDS patients with hepatitis C: the Brazilian National Cohort of 1995-1996. *AIDS* 2005; 19 Suppl 4:S27-S30.
- (189) Martin V, Cayla JA, Bolea A, Castilla J. Mycobacterium tuberculosis and human immunodeficiency virus co-infection in intravenous drug users on admission to prison. *Int J Tuberc Lung Dis* 2000; 4(1):41-46.
- (190) Mashkilleysen N, Leinikki P. Evolution of the HIV epidemic in Kaliningrad, Russia. *J Clin Virol* 1999; 12(1):37-42.
- (191) Masur H, Kaplan JE, Holmes KK. Guidelines for preventing opportunistic infections among HIV-infected persons--2002. Recommendations of the U.S. Public Health Service and the Infectious Diseases Society of America. *Ann Intern Med* 2002; 137(5 Pt 2):435-478.
- (192) Mateu-Gelabert P, Maslow C, Flom PL, Sandoval M, Bolyard M, Friedman SR. Keeping it together: stigma, response, and perception of risk in relationships between drug injectors and crack smokers, and other community residents. *AIDS Care* 2005; 17(7):802-813.
- (193) Mayans MV, Maguire A, Miret M, Casabona J. Disproportionate high incidence of invasive cervical cancer as an AIDS-indicative disease among young women in Catalonia, Spain. *Sex Transm Dis* 1999; 26(9):500-503.
- (194) Mayers MM, Davenny K, Schoenbaum EE et al. A prospective study of infants of human immunodeficiency virus seropositive and seronegative women with a history of intravenous drug use or of intravenous drug-using sex partners, in the Bronx, New York City. *Pediatrics* 1991; 88(6):1248-1256.
- (195) Mayor AM, Gomez MA, Otero JF, Vila S, Hunter RF. Pulmonary tuberculosis mortality risks in a cohort of HIV/AIDS patients in Puerto Rico. *Cell Mol Biol (Noisy -le-grand)* 2001; 47(7):1143-1148.
- (196) Mayor AM, Gomez MA, Rios E, Hunter RF. Recurrent pneumonia mortality risk in a HIV/AIDS Puerto Rican cohort. *Cell Mol Biol (Noisy -le-grand)* 2003; 49(8):1199-1204.
- (197) Mayor AM, Gomez MA, Fernandez DM, Rios-Olivares E, Thomas JC, Hunter RF. Morbidity and mortality profile of human immunodeficiency virus-infected patients with and without hepatitis C co-infection. *Am J Trop Med Hyg* 2006; 74(2): 239-245.
- (198) McCusker J, Willis G, McDonald M, Lewis BF, Sereti SM, Feldman ZT. Admissions of injection drug users to drug abuse treatment following HIV counseling and testing. *Public Health Rep* 1994; 109(2):212-218.
- (199) McCusker J, Goldstein R, Bigelow C, Zorn M. Psychiatric status and HIV risk reduction among residential drug abuse treatment clients. *Addiction* 1995; 90(10): 1377-1387.
- (200) McCusker J, Stoddard AM, Hindin RN, Garfield FB, Frost R. Changes in HIV risk behavior following alternative residential programs of drug abuse treatment and AIDS education. *Ann Epidemiol* 1996; 6(2):119-125.

- (201) McCusker J, Bigelow C, Frost R et al. The effects of planned duration of residential drug abuse treatment on recovery and HIV risk behavior. *Am J Public Health* 1997; 87(10):1637-1644.
- (202) McCusker J, Willis G, Vickers-Lahti M, Lewis B. Readmissions to drug abuse treatment and HIV risk behavior. *Am J Drug Alcohol Abuse* 1998; 24(4):523-540.
- (203) Mehta SH, Thomas DL, Sulkowski MS, Safaein M, Vlahov D, Strathdee SA. A framework for understanding factors that affect access and utilization of treatment for hepatitis C virus infection among HCV-mono-infected and HIV/HCV-co-infected injection drug users. *AIDS* 2005; 19 Suppl 3:S179-S189.
- (204) Mehta SH, Lucas G, Astemborski J, Kirk GD, Vlahov D, Galai N. Early immunologic and virologic responses to highly active antiretroviral therapy and subsequent disease progression among HIV-infected injection drug users. *AIDS Care* 2007; 19(5):637-645.
- (205) Melo AC, Caiaffa WT, Cesar CC, Dantas RV, Couttolenc BF. Utilization of HIV/AIDS treatment services: comparing injecting drug users and other clients. *Cad Saude Publica* 2006; 22(4):803-813.
- (206) Mesquita F, Doneda D, Gandolfi D et al. Brazilian response to the human immunodeficiency virus/acquired immunodeficiency syndrome epidemic among injection drug users. *Clin Infect Dis* 2003; 37 Suppl 5:S382-S385.
- (207) Metsch LR, Pereyra M, Brewer TH. Use of HIV health care in HIV-seropositive crack cocaine smokers and other active drug users. *J Subst Abuse* 2001; 13(1-2): 155-167.
- (208) Meyer I, Empfield M, Engel D, Cournos F. Characteristics of HIV-positive chronically mentally ill inpatients. *Psychiatr Q* 1995; 66(3):201-207.
- (209) Michaels SH, Clark R, Kissinger P. Use of antiretroviral therapy by intravenous drug users with HIV. *JAMA* 1999; 281(8):699-700.
- (210) Miller CL, Wood E, Spittal PM et al. The future face of coinfection: prevalence and incidence of HIV and hepatitis C virus coinfection among young injection drug users. *J Acquir Immune Defic Syndr* 2004; 36(2):743-749.
- (211) Miro JM, Del RA, Mestres CA. Infective endocarditis and cardiac surgery in intravenous drug abusers and HIV-1 infected patients. *Cardiol Clin* 2003; 21(2): 167-1vi.
- (212) Moatti JP, Carrieri MP, Spire B, Gastaut JA, Cassuto JP, Moreau J. Adherence to HAART in French HIV-infected injecting drug users: the contribution of buprenorphine drug maintenance treatment. The Manif 2000 study group. *AIDS* 2000; 14(2): 151-155.
- (213) Mocroft A, Madge S, Johnson AM et al. A comparison of exposure groups in the EuroSIDA study: starting highly active antiretroviral therapy (HAART), response to HAART, and survival. *J Acquir Immune Defic Syndr* 1999; 22(4):369-378.
- (214) Mocroft A, Brette R, Kirk O et al. Changes in the cause of death among HIV positive subjects across Europe: results from the EuroSIDA study. *AIDS* 2002; 16 (12):1663-1671.
- (215) Mocroft A, Gatell J, Reiss P et al. Causes of death in HIV infection: the key determinant to define the clinical response to anti-HIV therapy. *AIDS* 2004; 18 (17):2333-2337.
- (216) Molitor F, Kuenneth C, Waltermeyer J et al. Linking HIV-infected persons of color and injection drug users to HIV medical and other services: the California Bridge Project. *AIDS Patient Care STDS* 2005; 19(6):406-412.
- (217) Moore AL, Kirk O, Johnson AM et al. Virologic, immunologic, and clinical response to highly active antiretroviral therapy: the gender issue revisited. *J Acquir Immune Defic Syndr* 2003; 32(4):452-461.
- (218) Moore RD, Keruly JC, Chaisson RE. Differences in HIV disease progression by injecting drug use in HIV-infected persons in care. *J Acquir Immune Defic Syndr* 2004; 35(1):46-51.

- (219) Moreno A, Perez-Elias MJ, Casado JL et al. Long-term outcomes of protease inhibitor-based therapy in antiretroviral treatment-naïve HIV-infected injection drug users on methadone maintenance programmes. *AIDS* 2001; 15(8):1068-1070.
- (220) Morison L. The global epidemiology of HIV/AIDS. *Br Med Bull* 2001; 58:7-18.
- (221) Morris JD, Golub ET, Mehta SH, Jacobson LP, Gange SJ. Injection drug use and patterns of highly active antiretroviral therapy use: an analysis of ALIVE, WIHS, and MACS cohorts. *AIDS Res Ther* 2007; 4:12.
- (222) Muga R, Roca J, Egea JM et al. Mortality of HIV-positive and HIV-negative heroin abusers as a function of duration of injecting drug use. *J Acquir Immune Defic Syndr* 2000; 23(4):332-338.
- (223) Muga R, Egea JM, Sanvisens A et al. Impact of injecting drug use on the interruption of antiretroviral therapies. *J Epidemiol Community Health* 2004; 58(4):286-287.
- (224) Munoz-Perez MA, Rodriguez-Pichardo A, Camacho MF. Sexually transmitted diseases in 1161 HIV-positive patients: a 38-month prospective study in southern Spain. *J Eur Acad Dermatol Venereol* 1998; 11(3):221-226.
- (225) Murri R, Fantoni M, Del BC et al. Intravenous drug use, relationship with providers, and stage of HIV disease influence the prescription rates of protease inhibitors. *J Acquir Immune Defic Syndr* 1999; 22(5):461-466.
- (226) Murri R, Ammassari A, De LA, Cingolani A, Antinori A, Ortona L. Use of antiretroviral therapy by intravenous drug users with HIV. *JAMA* 1999; 281(8):700-701.
- (227) Mwamburi DM, Ghosh M, Fauntleroy J, Gorbach SL, Wanke CA. Predicting CD4 count using total lymphocyte count: a sustainable tool for clinical decisions during HAART use. *Am J Trop Med Hyg* 2005; 73(1):58-62.
- (228) Nair MP, Mahajan S, Hewitt R, Whitney ZR, Schwartz SA. Association of drug abuse with inhibition of HIV-1 immune responses: studies with long-term of HIV-1 non-progressors. *J Neuroimmunol* 2004; 147(1-2):21-25.
- (229) Nair MP, Schwartz SA, Mahajan SD et al. Drug abuse and neuropathogenesis of HIV infection: role of DC-SIGN and IDO. *J Neuroimmunol* 2004; 157(1-2):56-60.
- (230) Navaline HA, Snider EC, Petro CJ et al. Preparations for AIDS vaccine trials. An automated version of the Risk Assessment Battery (RAB): enhancing the assessment of risk behaviors. *AIDS Res Hum Retroviruses* 1994; 10 Suppl 2:S281-S283.
- (231) Neal JJ, Fleming PL, Green TA, Ward JW. Trends in heterosexually acquired AIDS in the United States, 1988 through 1995. *J Acquir Immune Defic Syndr Hum Retrovirol* 1997; 14(5):465-474.
- (232) Nelson KE. The epidemiology of HIV infection among injecting drug users and other risk populations in Thailand. *AIDS* 1994; 8(10):1499-1500.
- (233) Nguyen OK, Dore GJ, Kaldor JM, Hellard ME. Recruitment and follow-up of injecting drug users in the setting of early hepatitis C treatment: insights from the ATAHIC study. *Int J Drug Policy* 2007; 18(5):447-451.
- (234) Niederau C, Kapagiannidis C. [Epidemiology of hepatitis C in Germany]. *Med Klin (Munich)* 2006; 101(6):448-457.
- (235) Nissapatorn V, Lee C, Fatt QK, Abdullah KA. AIDS-related opportunistic infections in Hospital Kuala Lumpur. *Jpn J Infect Dis* 2003; 56(5-6):187-192.
- (236) Nosyk B, Sun H, Li X, Palepu A, Anis AH. Highly active antiretroviral therapy and hospital readmission: comparison of a matched cohort. *BMC Infect Dis* 2006; 6:146.
- (237) O'Connell JM, Braitstein P, Hogg RS et al. Age, adherence and injection drug use predict virological suppression among men and women enrolled in a population-based antiretroviral drug treatment programme. *Antivir Ther* 2003; 8(6):569-576.

- (238) O'Connor PG, Molde S, Henry S, Shockcor WT, Schottenfeld RS. Human immunodeficiency virus infection in intravenous drug users: a model for primary care. *Am J Med* 1992; 93(4):382-386.
- (239) Oertle D, Edelmann R, Ostewalder J, Vernazza PL, Galeazzi RL. [HIV prevention in HIV-positive drug addicts. A methadone-supported model]. *Schweiz Med Wochenschr* 1993; 123(48):2284-2292.
- (240) Opravil M, Hunziker R, Luthy R, Grob PJ. [Chronic hepatitis B and C in HIV-infected patients]. *Dtsch Med Wochenschr* 1998; 123(24):753-760.
- (241) Orio M, Pena JM, Rives MT et al. [Changes in vertical HIV transmission: comparison between 1994 and 2004]. *Med Clin (Barc)* 2007; 128(9):321-324.
- (242) Pach A, III, Cerbone FG, Gerstein DR. A qualitative investigation of antiretroviral therapy among injection drug users. *AIDS Behav* 2003; 7(1):87-100.
- (243) Palepu A, Yip B, Miller C et al. Factors associated with the response to antiretroviral therapy among HIV-infected patients with and without a history of injection drug use. *AIDS* 2001; 15(3):423-424.
- (244) Palepu A, Tyndall MW, Li K et al. Alcohol use and incarceration adversely affect HIV-1 RNA suppression among injection drug users starting antiretroviral therapy. *J Urban Health* 2003; 80(4):667-675.
- (245) Palepu A, Tyndall M, Yip B, O'Shaughnessy MV, Hogg RS, Montaner JS. Impaired virologic response to highly active antiretroviral therapy associated with ongoing injection drug use. *J Acquir Immune Defic Syndr* 2003; 32(5):522-526.
- (246) Palepu A, Tyndall MW, Chan K, Wood E, Montaner JS, Hogg RS. Initiating highly active antiretroviral therapy and continuity of HIV care: the impact of incarceration and prison release on adherence and HIV treatment outcomes. *Antivir Ther* 2004; 9(5):713-719.
- (247) Palepu A, Tyndall MW, Joy R et al. Antiretroviral adherence and HIV treatment outcomes among HIV/HCV co-infected injection drug users: the role of methadone maintenance therapy. *Drug Alcohol Depend* 2006; 84(2):188-194.
- (248) Pantin H, Prado G, Schwartz SJ, Sullivan S. Methodological challenges in designing efficacious drug abuse and HIV preventive interventions for Hispanic adolescent subgroups. *J Urban Health* 2005; 82(2 Suppl 3):iii92-102.
- (249) Parienti JJ. Intravenous drug users risk group should also benefit from simpler highly active antiretroviral therapy. *AIDS* 2002; 16(15):2097.
- (250) Peretti-Watel P, Spire B, Lert F, Obadia Y. [Seropositive people infected through intravenous drug use: a persistent vulnerability]. *Rev Prat* 2005; 55(19):2093-2100.
- (251) Peretti-Watel P, Spire B, Lert F, Obadia Y. Drug use patterns and adherence to treatment among HIV-positive patients: evidence from a large sample of French outpatients (ANRS-EN12-VESPA 2003). *Drug Alcohol Depend* 2006; 82 Suppl 1:S71-S79.
- (252) Perez-Hoyos S, del AJ, Muga R et al. Effectiveness of highly active antiretroviral therapy in Spanish cohorts of HIV seroconverters: differences by transmission category. *AIDS* 2003; 17(3):353-359.
- (253) Perez-Molina JA. Safety and tolerance of efavirenz in different antiretroviral regimens: results from a national multicenter prospective study in 1,033 HIV-infected patients. *HIV Clin Trials* 2002; 3(4):279-286.
- (254) Pezzotti P, Galai N, Vlahov D, Rezza G, Lyles CM, Astemborski J. Direct comparison of time to AIDS and infectious disease death between HIV seroconverter injection drug users in Italy and the United States: results from the ALIVE and ISS studies. *AIDS Link to Intravenous Experiences. Italian Seroconversion Study. J Acquir Immune Defic Syndr Hum Retrovirol* 1999; 20(3):275-282.
- (255) Pfefferkorn U, Viehl CT, Bassetti S, Wolff T, Oertli D. [Injection site abscesses in intravenous drug users. Frequency of associated complications related to localisation]. *Chirurg* 2005; 76(11):1053-1057.

- (256) Pilowsky DJ, Knowlton AR, Latkin CA, Hoover DR, Chung SE, Celentano DD. Children of injection drug users: impact of parental HIV status, AIDS, and depression. *J Urban Health* 2001; 78(2):327-339.
- (257) Pilowsky DJ, Zybort PA, Hsieh PW, Vlahov D, Susser E. Children of HIV-positive drug-using parents. *J Am Acad Child Adolesc Psychiatry* 2003; 42(8):950-956.
- (258) Pinkerton SD, Martin JN, Roland ME, Katz MH, Coates TJ, Kahn JO. Cost-effectiveness of HIV postexposure prophylaxis following sexual or injection drug exposure in 96 metropolitan areas in the United States. *AIDS* 2004; 18(15):2065-2073.
- (259) Platt L, Hickman M, Rhodes T et al. The prevalence of injecting drug use in a Russian city: implications for harm reduction and coverage. *Addiction* 2004; 99(11):1430-1438.
- (260) Poundstone KE, Chaisson RE, Moore RD. Differences in HIV disease progression by injection drug use and by sex in the era of highly active antiretroviral therapy. *AIDS* 2001; 15(9):1115-1123.
- (261) Pradier C, Carrieri P, Bentz L et al. Impact of short-term adherence on virological and immunological success of HAART: a case study among French HIV-infected IDUs. *Int J STD AIDS* 2001; 12(5):324-328.
- (262) Preau M, Protopopescu C, Spire B et al. Health related quality of life among both current and former injection drug users who are HIV-infected. *Drug Alcohol Depend* 2007; 86(2-3):175-182.
- (263) Prendergast ML, Urada D, Podus D. Meta-analysis of HIV risk-reduction interventions within drug abuse treatment programs. *J Consult Clin Psychol* 2001; 69(3):389-405.
- (264) Prins M, Sabin CA, Lee CA, Devereux H, Coutinho RA. Pre-AIDS mortality and its association with HIV disease progression in haemophilic men, injecting drug users and homosexual men. *AIDS* 2000; 14(12):1829-1837.
- (265) Purcell DW, Metsch LR, Latka M et al. Interventions for seropositive injectors-research and evaluation: an integrated behavioral intervention with HIV-positive injection drug users to address medical care, adherence, and risk reduction. *J Acquir Immune Defic Syndr* 2004; 37 Suppl 2:S110-S118.
- (266) Purkayastha T, Wasi F, Shuter J. Factors associated with sustained virologic suppression in patients receiving antiretroviral therapy in an urban HIV care clinic. *AIDS Patient Care STDS* 2005; 19(12):785-793.
- (267) Rabkin JG, Johnson J, Lin SH et al. Psychopathology in male and female HIV-positive and negative injecting drug users: longitudinal course over 3 years. *AIDS* 1997; 11(4):507-515.
- (268) Rainey PM, Friedland G, Cance-Katz EF et al. Interaction of methadone with didanosine and stavudine. *J Acquir Immune Defic Syndr* 2000; 24(3):241-248.
- (269) Rancinan C, Neau D, Saves M et al. Is hepatitis C virus co-infection associated with survival in HIV-infected patients treated by combination antiretroviral therapy? *AIDS* 2002; 16(10):1357-1362.
- (270) Remien RH, Hirky AE, Johnson MO, Weinhardt LS, Whittier D, Le GM. Adherence to medication treatment: a qualitative study of facilitators and barriers among a diverse sample of HIV+ men and women in four US cities. *AIDS Behav* 2003; 7(1):61-72.
- (271) Risser D, Bonsch A, Schneider B, Vycudilik W, Bauer G. [Drug fatalities from the forensic medicine viewpoint. 10 years experiences of the Vienna Institute of Forensic Medicine]. *Wien Klin Wochenschr* 1994; 106(21):677-680.
- (272) Rittmannsberger H, Ruschak M, Silberbauer C. [Methadone substitution treatment. Results of an evaluation of 3 years implementation in an Austrian province]. *Nervenarzt* 1994; 65(5):338-344.
- (273) Rivera DR, Jr., Flores R, Melendez J, Gomez MA, Vila S, Hunter R. Profile of HIV patients with and without bacterial endocarditis. *Cell Mol Biol (Noisy -le-grand)* 1997; 43(7):1153-1160.

- (274) Roca B, Gomez CJ, Arnedo A. Stavudine, lamivudine and indinavir in drug abusing and non-drug abusing HIV-infected patients: adherence, side effects and efficacy. *J Infect* 1999; 39(2):141-145.
- (275) Rodriguez-Arenas MA, Jarrin I, del AJ et al. Delay in the initiation of HAART, poorer virological response, and higher mortality among HIV-infected injecting drug users in Spain. *AIDS Res Hum Retroviruses* 2006; 22(8):715-723.
- (276) Roland ME, Martin JN, Grant RM et al. Postexposure prophylaxis for human immunodeficiency virus infection after sexual or injection drug use exposure: identification and characterization of the source of exposure. *J Infect Dis* 2001; 184(12):1608-1612.
- (277) Roland ME, Neilands TB, Krone MR et al. Seroconversion following nonoccupational postexposure prophylaxis against HIV. *Clin Infect Dis* 2005; 41(10):1507-1513.
- (278) Rompalo AM, Shah N, Margolick JB et al. Evaluation of possible effects of continued drug use on HIV progression among women. *Int J STD AIDS* 2004; 15(5):322-327.
- (279) Ronald PJ, Witcomb JC, Robertson JR, Roberts JJ, Shishodia PC, Whittaker A. Problems of drug abuse, HIV and AIDS: the burden of care in one general practice. *Br J Gen Pract* 1992; 42(359):232-235.
- (280) Rothenberg R. The relevance of social epidemiology in HIV/AIDS and drug abuse research. *Am J Prev Med* 2007; 32(6 Suppl):S147-S153.
- (281) Rothenberg R, Dan My HT, Muth SQ, Crosby R. The Atlanta Urban Adolescent Network Study: a network view of STD prevalence. *Sex Transm Dis* 2007; 34(8):525-531.
- (282) Roudinskii NI, Sukhanova AL, Kazennova EV et al. Diversity of human immunodeficiency virus type 1 subtype A and CRF03_AB protease in Eastern Europe: selection of the V77I variant and its rapid spread in injecting drug user populations. *J Virol* 2004; 78(20):11276-11287.
- (283) Rusch M, Nixon S, Schilder A, Braitstein P, Chan K, Hogg RS. Use of antiretroviral therapy among HIV positive individuals living in British Columbia. *AIDS Care* 2004; 16(7):914-922.
- (284) Rusch ML, Farzadegan H, Tarwater PM, Safaeian M, Vlahov D, Strathdee SA. Sexual risk behavior among injection drug users before widespread availability of highly active antiretroviral therapy. *AIDS Behav* 2005; 9(3):289-299.
- (285) Ryan CE, Elliott JH, Middleton T et al. The molecular epidemiology of HIV type 1 among Vietnamese Australian injecting drug users in Melbourne, Australia. *AIDS Res Hum Retroviruses* 2004; 20(12):1364-1367.
- (286) Sabine C. AIDS events among individuals initiating HAART: do some patients experience a greater benefit from HAART than others? *AIDS* 2005; 19(17):1995-2000.
- (287) Sackoff J, McFarland J, Su S, Bryan E. Prophylaxis for opportunistic infections among HIV-infected patients receiving medical care. *J Acquir Immune Defic Syndr Hum Retrovirol* 1998; 19(4):387-392.
- (288) Salomon H, Wainberg MA, Brenner B et al. Prevalence of HIV-1 resistant to antiretroviral drugs in 81 individuals newly infected by sexual contact or injecting drug use. Investigators of the Quebec Primary Infection Study. *AIDS* 2000; 14(2):F17-F23.
- (289) Sambamoorthi U, Warner LA, Crystal S, Walkup J. Drug abuse, methadone treatment, and health services use among injection drug users with AIDS. *Drug Alcohol Depend* 2000; 60(1):77-89.
- (290) Santos TJ, Costa CM, Goubau P et al. Western blot seroindeterminate individuals for human T-lymphotropic virus I/II (HTLV-I/II) in Fortaleza (Brazil): a serological and molecular diagnostic and epidemiological approach. *Braz J Infect Dis* 2003; 7(3):202-209.

- (291) Sarkar K, Panda S, Das N, Sarkar S. Relationship of national highway with injecting drug abuse and HIV in rural Manipur, India. *Indian J Public Health* 1997; 41(2):49-51.
- (292) Sarkar K, Bal B, Mukherjee R et al. Epidemic of HIV coupled with hepatitis C virus among injecting drug users of Himalayan West Bengal, Eastern India, Bordering Nepal, Bhutan, and Bangladesh. *Subst Use Misuse* 2006; 41(3):341-352.
- (293) Sawyer RC, Brown LS, Jr., Bailey J et al. Drug abuse treatment programs as centers for HIV-related research and treatment. *J Addict Dis* 1993; 12(4):121-129.
- (294) Schrooten W, Fleerackers Y, Andraghetti R et al. Limited access to antiretroviral therapy for intravenous drug users in Europe. *J Epidemiol Community Health* 1999; 53(11):739.
- (295) Schumacher JE, Fischer G, Qian HZ. Policy drives harm reduction for drug abuse and HIV/AIDS prevention in some developing countries. *Drug Alcohol Depend* 2007; 91(2-3):300-305.
- (296) Schuster CR. Drug abuse research and HIV/AIDS: a national perspective from the US. *Br J Addict* 1992; 87(3):355-361.
- (297) Schwartlander B, Hamouda O, Koch MA. [The epidemiology and acquired immunodeficiency syndrome--status and trends]. *Verh Dtsch Ges Pathol* 1991; 75:61-68.
- (298) Segurado AC, Braga P, Etzel A, Cardoso MR. Hepatitis C virus coinfection in a cohort of HIV-infected individuals from Santos, Brazil: seroprevalence and associated factors. *AIDS Patient Care STDS* 2004; 18(3):135-143.
- (299) Selnes OA, Galai N, McArthur JC et al. HIV infection and cognition in intravenous drug users: long-term follow-up. *Neurology* 1997; 48(1):223-230.
- (300) Selwyn PA. The impact of HIV infection on medical services in drug abuse treatment programs. *J Subst Abuse Treat* 1996; 13(5):397-410.
- (301) Semaan S, Des J, Malow R. Behavior change and health-related interventions for heterosexual risk reduction among drug users. *Subst Use Misuse* 2006; 41(10-12):1349-1378.
- (302) Semba RD, Shah N, Vlahov D. Improvement of anemia among HIV-infected injection drug users receiving highly active antiretroviral therapy. *J Acquir Immune Defic Syndr* 2001; 26(4):315-319.
- (303) Sension MG, Farthing C, Shaffer AG, Graham E, Siemon-Hryczyk P, Pilson RS. Challenges of antiretroviral treatment in transient and drug-using populations: the SUN study. *AIDS Patient Care STDS* 2001; 15(3):129-136.
- (304) Serfaty L, Costagliola D, Wendum D et al. Impact of early-untreated HIV infection on chronic hepatitis C in intravenous drug users: a case-control study. *AIDS* 2001; 15(15):2011-2016.
- (305) Sethi AK, Celentano DD, Gange SJ, Gallant JE, Vlahov D, Farzadegan H. High-risk behavior and potential transmission of drug-resistant HIV among injection drug users. *J Acquir Immune Defic Syndr* 2004; 35(5):503-510.
- (306) Shapshak P, Duncan R, Nath A et al. Gene chromosomal organization and expression in cultured human neurons exposed to cocaine and HIV-1 proteins gp120 and tat: drug abuse and NeuroAIDS. *Front Biosci* 2006; 11:1774-1793.
- (307) Sherer R, Pulvirenti J, Stieglitz K et al. Hospitalization in HIV in Chicago. *J Int Assoc Physicians AIDS Care (Chic Ill)* 2002; 1(1):26-33.
- (308) Sherer RD, Jr., Fath MJ, Da Silva BA, Nicolau AM, Miller NL. The importance of potency and durability in HIV patient antiretroviral therapy preferences: a telephone survey. *AIDS Patient Care STDS* 2005; 19(12):794-802.
- (309) Shor-Posner G, Miguez MJ, Pineda LM et al. Impact of selenium status on the pathogenesis of mycobacterial disease in HIV-1-infected drug users during the era of highly active antiretroviral therapy. *J Acquir Immune Defic Syndr* 2002; 29(2):169-173.

- (310) Siegal HA, Carlson RG, Falck RS, Wang J. Drug abuse treatment experience and HIV risk behaviors among active drug injectors in Ohio. *Am J Public Health* 1995; 85(1):105-108.
- (311) Small W, Wood E, Jurgens R, Kerr T. Injection drug use, HIV/AIDS and incarceration: evidence from the Vancouver Injection Drug Users Study. *HIV AIDS Policy Law Rev* 2005; 10(3):1, 5-1,10.
- (312) Smit C, Geskus R, Walker S et al. Effective therapy has altered the spectrum of cause-specific mortality following HIV seroconversion. *AIDS* 2006; 20(5):741-749.
- (313) Smit C, Lindenbarg K, Geskus RB, Brinkman K, Coutinho RA, Prins M. Highly active antiretroviral therapy (HAART) among HIV-infected drug users: a prospective cohort study of sexual risk and injecting behaviour. *Addiction* 2006; 101(3):433-440.
- (314) Smit E, Semba RD, Pilibosian E et al. Body habitus in a cohort of HIV-seropositive and HIV-seronegative injection drug users. *AIDS Patient Care STDS* 2005; 19(1):19-30.
- (315) Smit E, Crespo CJ, Semba RD et al. Physical activity in a cohort of HIV-positive and HIV-negative injection drug users. *AIDS Care* 2006; 18(8):1040-1045.
- (316) Smith PC, Page JB. Medication therapy among intravenous drug users (IDUs) with HIV infection. *AIDS Patient Care STDS* 1996; 10(2):101-110.
- (317) Smolskaya T, Liitsola K, Zetterberg V et al. HIV epidemiology in the Northwestern Federal District of Russia: dominance of HIV type 1 subtype A. *AIDS Res Hum Retroviruses* 2006; 22(11):1074-1080.
- (318) Solomon L, Stein M, Flynn C et al. Health services use by urban women with or at risk for HIV-1 infection: the HIV Epidemiology Research Study (HERS). *J Acquir Immune Defic Syndr Hum Retrovirol* 1998; 17(3):253-261.
- (319) Sookoian S, Flichman D, Castano G, Frider B, Campos R. Relationship between diversity of hepatitis C quasispecies and histological severity of liver disease. *Medicina (B Aires)* 2000; 60(5 Pt 1):587-590.
- (320) Sorensen JL, Copeland AL. Drug abuse treatment as an HIV prevention strategy: a review. *Drug Alcohol Depend* 2000; 59(1):17-31.
- (321) Soriano V, Vallejo A, Gutierrez M et al. Epidemiology of human T-lymphotropic virus type II (HTLV-II) infection in Spain. HTLV Spanish Study Group. *Eur J Epidemiol* 1996; 12(6):625-629.
- (322) Soriano V, Garcia-Samaniego J, Valencia E, Rodriguez-Rosado R, Munoz F, Gonzalez-Lahoz J. Impact of chronic liver disease due to hepatitis viruses as cause of hospital admission and death in HIV-infected drug users. *Eur J Epidemiol* 1999; 15(1):1-4.
- (323) Sosa-Estani S, Rossi D, Weissenbacher M. Epidemiology of human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome in injection drug users in Argentina: high seroprevalence of HIV infection. *Clin Infect Dis* 2003; 37 Suppl 5:S338-S342.
- (324) Spijkerman IJ, Koot M, Prins M et al. Lower prevalence and incidence of HIV-1 syncytium-inducing phenotype among injecting drug users compared with homosexual men. *AIDS* 1995; 9(9):1085-1092.
- (325) Spijkerman IJ, Langendam MW, van Ameijden EJ, Coutinho RA, van den HA. Gender differences in clinical manifestations before AIDS diagnosis among injecting drug users. *Eur J Epidemiol* 1998; 14(3):213-218.
- (326) Steel E, Haverkos HW. Epidemiologic studies on HIV/AIDS and drug abuse. *Am J Drug Alcohol Abuse* 1992; 18(2):167-175.
- (327) Steffen T, Gutzwiller F. [Hepatitis B and C in intravenous drug abusers in Switzerland]. *Schweiz Rundsch Med Prax* 1999; 88(47):1937-1944.
- (328) Stein MD, Urdaneta ME, Clarke J et al. Use of antiretroviral therapies by HIV-infected persons receiving methadone maintenance. *J Addict Dis* 2000; 19(1): 85-94.
- (329) Stoeckli TC, Steffen-Klopstein I, Erb P, Brown TM, Kalish ML. Molecular epidemiology of HIV-1 in Switzerland: evidence for a silent mutation in the C2V3

- region distinguishing intravenous drug users from homosexual men. Swiss HIV Cohort Study. *J Acquir Immune Defic Syndr* 2000; 23(1):58-67.
- (330) Strader DB. Coinfection with HIV and hepatitis C virus in injection drug users and minority populations. *Clin Infect Dis* 2005; 41 Suppl 1:S7-13.
- (331) Su L, Graf M, Zhang Y et al. Characterization of a virtually full-length human immunodeficiency virus type 1 genome of a prevalent intersubtype (C/B') recombinant strain in China. *J Virol* 2000; 74(23):11367-11376.
- (332) Sued O, Miro JM, Alquezar A et al. Primary human immunodeficiency virus type 1 infection: clinical, virological and immunological characteristics of 75 patients (1997-2003). *Enferm Infecc Microbiol Clin* 2006; 24(4):238-244.
- (333) Suligoi B, Giuliani M, Galai N, Balducci M. HIV incidence among repeat HIV testers with sexually transmitted diseases in Italy. *STD Surveillance Working Group. AIDS* 1999; 13(7):845-850.
- (334) Sylla L, Bruce RD, Kamarulzaman A, Altice FL. Integration and co-location of HIV/AIDS, tuberculosis and drug treatment services. *Int J Drug Policy* 2007; 18(4):306-312.
- (335) Tang AM, Smit E. Oxidative stress in HIV-1-infected injection drug users. *J Acquir Immune Defic Syndr* 2000; 25 Suppl 1:S12-S18.
- (336) Tang AM, Smit E, Semba RD et al. Improved antioxidant status among HIV-infected injecting drug users on potent antiretroviral therapy. *J Acquir Immune Defic Syndr* 2000; 23(4):321-326.
- (337) Taylor A, Frischer M, Green ST, Goldberg D, McKeganey N, Gruer L. Low and stable prevalence of HIV among drug injectors in Glasgow. *Int J STD AIDS* 1994; 5(2):105-107.
- (338) Taylor EW, Cox AG, Zhao L et al. Nutrition, HIV, and drug abuse: the molecular basis of a unique role for selenium. *J Acquir Immune Defic Syndr* 2000; 25 Suppl 1:S53-S61.
- (339) Toro C, Rodes B, Bassani S et al. Molecular epidemiology of HTLV-2 infection among intravenous drug users in Spain. *J Clin Virol* 2005; 33(1):65-70.
- (340) Tovanabutra S, Beyrer C, Sakkhachornphop S et al. The changing molecular epidemiology of HIV type 1 among northern Thai drug users, 1999 to 2002. *AIDS Res Hum Retroviruses* 2004; 20(5):465-475.
- (341) Tran TT, Maljkovic I, Swartling S, Phung DC, Chiodi F, Leitner T. HIV-1 CRF01_AE in intravenous drug users in Hanoi, Vietnam. *AIDS Res Hum Retroviruses* 2004; 20(3):341-345.
- (342) Tun W, Gange SJ, Vlahov D, Strathdee SA, Celentano DD. Increase in sexual risk behavior associated with immunologic response to highly active antiretroviral therapy among HIV-infected injection drug users. *Clin Infect Dis* 2004; 38(8):1167-1174.
- (343) Turci M, Pilotti E, Ronzi P et al. Coinfection with HIV-1 and human T-Cell lymphotropic virus type II in intravenous drug users is associated with delayed progression to AIDS. *J Acquir Immune Defic Syndr* 2006; 41(1):100-106.
- (344) Turner BJ, Fleishman JA, Wenger N et al. Effects of drug abuse and mental disorders on use and type of antiretroviral therapy in HIV-infected persons. *J Gen Intern Med* 2001; 16(9):625-633.
- (345) Ulmer A. [Dihydrocodeine in substance dependence]. *Fortschr Med* 1990; 108(13):261.
- (346) Uuskula A, McNutt LA, Dehovitz J, Fischer K, Heimer R. High prevalence of blood-borne virus infections and high-risk behaviour among injecting drug users in Tallinn, Estonia. *Int J STD AIDS* 2007; 18(1):41-46.
- (347) Vallejo A, Ruiz-Mateos E, Molina-Pinelo S et al. Immunovirologic characteristics of human immunodeficiency virus-infected patients consisting mainly of injecting drug users on highly active antiretroviral treatment with prolonged virologic failure. *Viral Immunol* 2006; 19(4):759-767.

- (348) van Asten LC, Boufassa F, Schiffer V et al. Limited effect of highly active antiretroviral therapy among HIV-positive injecting drug users on the population level. *Eur J Public Health* 2003; 13(4):347-349.
- (349) van der Werf MJ, Schinkel J, van SG, Vergouwe I, Wix RA, van Ameijden EJ. Highly active antiretroviral therapy among drug users in Amsterdam: self-perceived reasons for not receiving therapy. *AIDS* 1999; 13(10):1280-1281.
- (350) van Haastrecht HJ, Mientjes GH, van den Hoek AJ, Coutinho RA. Death from suicide and overdose among drug injectors after disclosure of first HIV test result. *AIDS* 1994; 8(12):1721-1725.
- (351) van Haastrecht HJ, van den Hoek AJ, Coutinho RA. High mortality among HIV-infected injecting drug users without AIDS diagnosis: implications for HIV infection epidemic modellers? *AIDS* 1994; 8(3):363-366.
- (352) van AL, Verhaest I, Lamzira S et al. Spread of hepatitis C virus among European injection drug users infected with HIV: a phylogenetic analysis. *J Infect Dis* 2004; 189(2):292-302.
- (353) van AL, Prins M. Infection with concurrent multiple hepatitis C virus genotypes is associated with faster HIV disease progression. *AIDS* 2004; 18(17):2319-2324.
- (354) van AL, Zangerle R, Hernandez A, I et al. Do HIV disease progression and HAART response vary among injecting drug users in Europe? *Eur J Epidemiol* 2005; 20(9):795-804.
- (355) van SA, Danner S, Ghani AC, Gras L, Anderson RM, de WF. Mortality in patients with successful initial response to highly active antiretroviral therapy is still higher than in non-HIV-infected individuals. *J Acquir Immune Defic Syndr* 2005; 40(2):212-218.
- (356) Vassilev ZP, Hagan H. Highly active antiretroviral therapy for injection drug users: physician-recommended strategies for enhanced adherence. *Antivir Ther* 2004; 9(3):461.
- (357) Verachai V, Phutiprawan T, Sawanpanyalert P. HIV infection among substance abusers in Thanyarak Institute On Drug Abuse, Thailand, 1987-2002. *J Med Assoc Thai* 2005; 88(1):76-79.
- (358) Vincent E, Bouhnik AD, Carrieri MP et al. Impact of HAART-related side effects on unsafe sexual behaviours in HIV-infected injecting drug users: 7-year follow up. *AIDS* 2004; 18(9):1321-1325.
- (359) Visnegarwala F, Chen L, Raghavan S, Tedaldi E. Prevalence of diabetes mellitus and dyslipidemia among antiretroviral naive patients co-infected with hepatitis C virus (HCV) and HIV-1 compared to patients without co-infection. *J Infect* 2005; 50(4):331-337.
- (360) Vlahov D, Safaïen M, Lai S et al. Sexual and drug risk-related behaviours after initiating highly active antiretroviral therapy among injection drug users. *AIDS* 2001; 15(17):2311-2316.
- (361) Vlahov D, Celentano DD. Access to highly active antiretroviral therapy for injection drug users: adherence, resistance, and death. *Cad Saude Publica* 2006; 22(4):705-718.
- (362) Vlahov D, O'Driscoll P, Mehta SH et al. Risk factors for methadone outside treatment programs: implications for HIV treatment among injection drug users. *Addiction* 2007; 102(5):771-777.
- (363) Voirin N, Treppe C, Mialhes P et al. Survival in HIV-infected patients is associated with hepatitis C virus infection and injecting drug use since the use of highly active antiretroviral therapy in the Lyon observational database. *J Viral Hepat* 2004; 11(6):559-562.
- (364) von BU, Petitjean S, Stohler R, Natsch C, Ladewig D. [Substitution as a possibility for the treatment of opiate dependent patients]. *Psychiatr Prax* 1994; 21(1):7-9.
- (365) Wagner G. Placebo practice trials: the best predictor of adherence readiness for HAART among drug users? *HIV Clin Trials* 2003; 4(4):269-281.

- (366) Wagner GJ, Ryan GW. Relationship between routinization of daily behaviors and medication adherence in HIV-positive drug users. *AIDS Patient Care STDS* 2004; 18(7):385-393.
- (367) Waldrop-Valverde D, Valverde E. Homelessness and psychological distress as contributors to antiretroviral nonadherence in HIV-positive injecting drug users. *AIDS Patient Care STDS* 2005; 19(5):326-334.
- (368) Wang C, Vlahov D, Galai N et al. Mortality in HIV-seropositive versus -seronegative persons in the era of highly active antiretroviral therapy: implications for when to initiate therapy. *J Infect Dis* 2004; 190(6):1046-1054.
- (369) Wang C, Masho SW, Nixon DE. When to start antiretroviral therapy. *Curr HIV/AIDS Rep* 2006; 3(2):66-73.
- (370) Wasi C, Herring B, Raktham S et al. Determination of HIV-1 subtypes in injecting drug users in Bangkok, Thailand, using peptide-binding enzyme immunoassay and heteroduplex mobility assay: evidence of increasing infection with HIV-1 subtype E. *AIDS* 1995; 9(8):843-849.
- (371) Weber R, Ledergerber B, Opravil M, Siegenthaler W, Luthy R. Progression of HIV infection in misusers of injected drugs who stop injecting or follow a programme of maintenance treatment with methadone. *BMJ* 1990; 301(6765):1362-1365.
- (372) Weiser SD, Wolfe WR, Bangsberg DR. The HIV epidemic among individuals with mental illness in the United States. *Curr HIV/AIDS Rep* 2004; 1(4):186-192.
- (373) Weissman G, Melchior L, Huba G et al. Women living with drug abuse and HIV disease: drug abuse treatment access and secondary prevention issues. *J Psychoactive Drugs* 1995; 27(4):401-411.
- (374) Welch K, Morse A. The clinical profile of end-stage AIDS in the era of highly active antiretroviral therapy. *AIDS Patient Care STDS* 2002; 16(2):75-81.
- (375) Williams M, Bowen A, Ross M, Freeman R, Elwood W. Perceived compliance with AZT dosing among a sample of African-American drug users. *Int J STD AIDS* 2000; 11(1):57-63.
- (376) Winstanley EL, Gust SW, Strathdee SA. Drug abuse and HIV/AIDS: international research lessons and imperatives. *Drug Alcohol Depend* 2006; 82 Suppl 1:S1-S5.
- (377) Womack C, Newman C, Rissing JP et al. Epidemiology of HIV-1 infection in rural Georgia: demographic trends and analysis at the Medical College of Georgia. *Cell Mol Biol (Noisy -le-grand)* 1997; 43(7):1085-1090.
- (378) Wood E, Schechter MT, Tyndall MW, Montaner JS, O'Shaughnessy MV, Hogg RS. Antiretroviral medication use among injection drug users: two potential futures. *AIDS* 2000; 14(9):1229-1235.
- (379) Wood E, Montaner JS, Yip B et al. Adherence and plasma HIV RNA responses to highly active antiretroviral therapy among HIV-1 infected injection drug users. *CMAJ* 2003; 169(7):656-661.
- (380) Wood E, Hogg RS, Bonner S et al. Staging for antiretroviral therapy among HIV-infected drug users. *JAMA* 2004; 292(10):1175-1177.
- (381) Wood E, Montaner JS, Yip B et al. Adherence to antiretroviral therapy and CD4 T-cell count responses among HIV-infected injection drug users. *Antivir Ther* 2004; 9(2):229-235.
- (382) Wood E, Hogg RS, Yip B, Harrigan PR, O'Shaughnessy MV, Montaner JS. The impact of adherence on CD4 cell count responses among HIV-infected patients. *J Acquir Immune Defic Syndr* 2004; 35(3):261-268.
- (383) Wood E, Hogg RS, Yip B et al. Rates of antiretroviral resistance among HIV-infected patients with and without a history of injection drug use. *AIDS* 2005; 19(11):1189-1195.
- (384) Wood E, Hogg RS, Kerr T, Palepu A, Zhang R, Montaner JS. Impact of accessing methadone on the time to initiating HIV treatment among antiretroviral-naive HIV-infected injection drug users. *AIDS* 2005; 19(8):837-839.

- (385) Wood E, Stoltz JA, Montaner JS, Kerr T. Evaluating methamphetamine use and risks of injection initiation among street youth: the ARYS study. *Harm Reduct J* 2006; 3:18.
- (386) Wood E, Kerr T, Hogg RS et al. Impact of HIV testing on uptake of HIV therapy among antiretroviral naive HIV-infected injection drug users. *Drug Alcohol Rev* 2006; 25(5):451-454.
- (387) Wood E, Kerr T, Hogg RS, Zhang R, Tyndall MW, Montaner JS. Validity of self-reported antiretroviral therapy use among injection drug users. *J Acquir Immune Defic Syndr* 2006; 41(4):530-531.
- (388) Wood E, Kerr T, Palepu A et al. Slower uptake of HIV antiretroviral therapy among Aboriginal injection drug users. *J Infect* 2006; 52(4):233-236.
- (389) Wood E, Hogg RS, Kerr T et al. Rates of inappropriate antiretroviral prescription among injection drug users. *Harm Reduct J* 2007; 4:2.
- (390) Wood E, Kerr T, Montaner JS. HIV treatment, injection drug use, and illicit drug policies. *Lancet* 2007; 370(9581):8-10.
- (391) Woods WJ, Guydish JR, Sorensen JL, Coutts A, Bostrom A, Acampora A. Changes in HIV-related risk behaviors following drug abuse treatment. *AIDS* 1999; 13(15):2151-2155.
- (392) Woody GE, Gallop R, Luborsky L et al. HIV risk reduction in the National Institute on Drug Abuse Cocaine Collaborative Treatment Study. *J Acquir Immune Defic Syndr* 2003; 33(1):82-87.
- (393) Xiridou M, van GF, Tappero JW et al. The spread of HIV-1 subtypes B and CRF01_AE among injecting drug users in Bangkok, Thailand. *J Acquir Immune Defic Syndr* 2007; 45(4):468-475.
- (394) Yang R, Xia X, Kusagawa S, Zhang C, Ben K, Takebe Y. On-going generation of multiple forms of HIV-1 intersubtype recombinants in the Yunnan Province of China. *AIDS* 2002; 16(10):1401-1407.
- (395) Zaccarelli M, Barracchini A, De LP et al. Factors related to virologic failure among HIV-positive injecting drug users treated with combination antiretroviral therapy including two nucleoside reverse transcriptase inhibitors and nevirapine. *AIDS Patient Care STDS* 2002; 16(2):67-73.
- (396) Zhang F, Au MC, Bouey PD et al. The diagnosis and treatment of HIV-infected children in China: challenges and opportunities. *J Acquir Immune Defic Syndr* 2007; 44(4):429-434.
- (397) Zhang L, Chen Z, Cao Y et al. Molecular characterization of human immunodeficiency virus type 1 and hepatitis C virus in paid blood donors and injection drug users in china. *J Virol* 2004; 78(24):13591-13599.
- (398) Zwahlen M, Gebhardt M, Rickenbach M, Egger M. [The Swiss HIV Cohort Study--resource for epidemiology and public health]. *Ther Umsch* 2004; 61(10): 593-598.