Hepatitis C in HIV Coinfection

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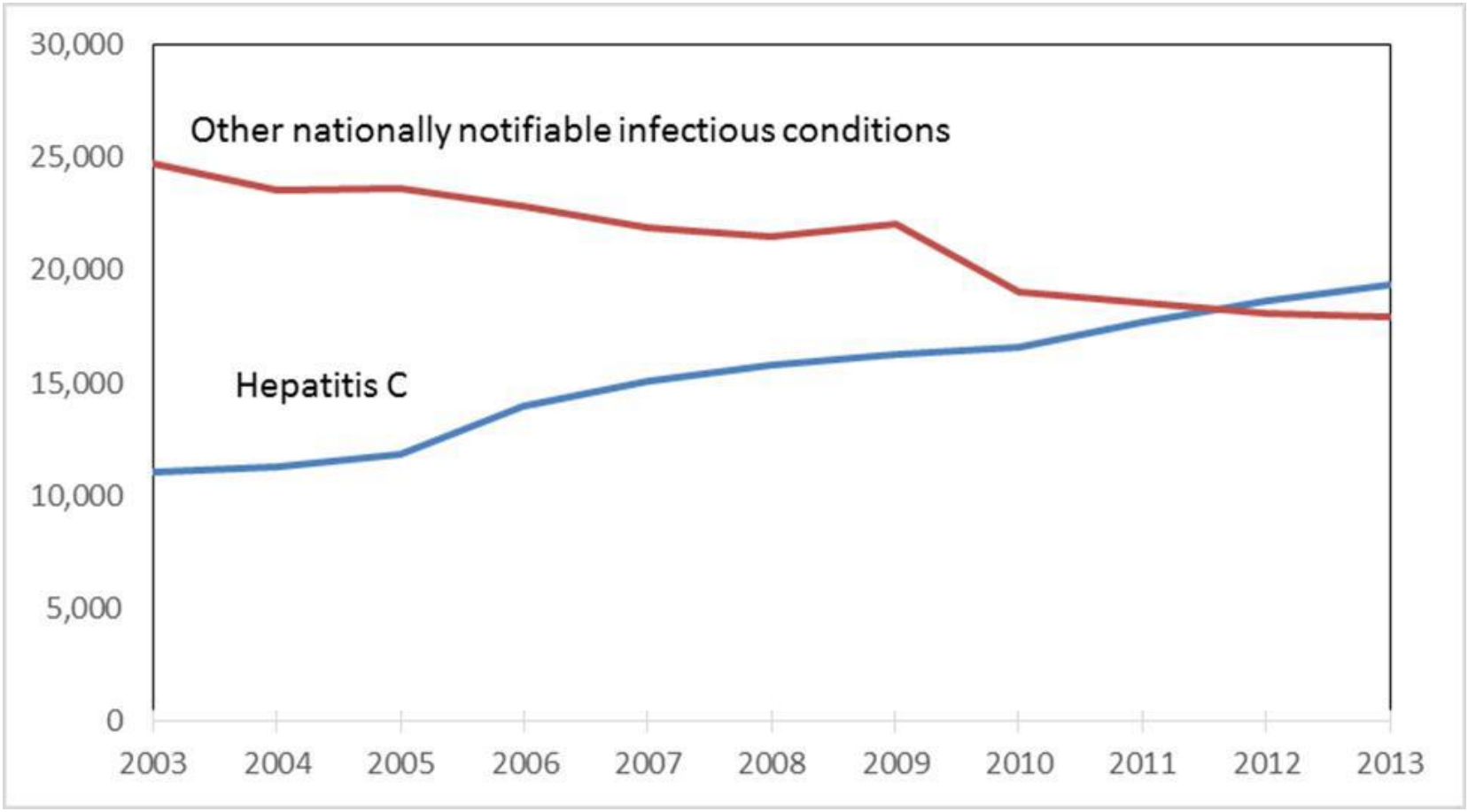
Disclosures

I have received research grant support to UCSF related to HCV from the following:

- Abbvie
- Bristol Myers Squibb (BMS)
- Gilead
- Merck
- Pfizer
- ACTG (NIH)

HCV Deaths vs. Other Notifiable Infectious Diseases (including HIV, TB & HBV) in US 2003-13



Ly CID 2016

	Globally	US
HCV	~ 130-150 million	~ 3.5 million Ab+ (2.7 HCV RNA, likely underestimate)
HIV	36 million	1.2 million
HIV-HCV	> 2 million	~ 25%

Natural history of HCV in HIV

- Higher HCV viral load in HIV
- If HCV untreated, faster progression to cirrhosis
- Higher incidenceof hepatocellular carcinoma which can present with more aggressive and widespread forms in HIV

Good news about HIV/HCV

- Excellent and generally equivalent cure rates (>95% cure rate)
- Generally same HCV treatment recommendations & duration
- HCV treatment options available for nearly every ART regimen

Less Good News

- Managing ART /DAA drug interactions can be complex
- Good data available and many excellent resources
- AASLD/IDSA Guidelines: www.hcvguidlines.org
- University of Liverpool HCV Drug interactions:

http://www.hep-druginteractions.org/

ART + DAA Scorecard

	SOF	Ledipasvir	VEL	Daclatasvir	P/r/O + D	EBR/GZP
ATV/r	No data	LDV ↑; ATV ↑[a]	VEL ↑; ATV↑[a]	DCV ↑*	ATV ↑; PAR ↑	GZP & EBV ↑, ATV ↑
DRV/r	SOF ↑; DRV ↔	LDV ↑; DRV ↔[a]	VEL↔; DRV ↔[a]	DCV ↑, DRV ↔	DRV ↓; PAR ↓/↑	GZP & ELB ↑; DRV ↔
LPV/r	No data	No data	VEL↔; LPV↔[a]	DCV ↑, LPV↔	LPV ↔; PAR ↑	GZP & EBR ↑; DRV ↔
EFV	SOF ↔; EFV ↔	LDV↓ EFV↓	VEL↓; EFV↓	DCV ↓**	No PK data**	GZP & EBR↓, EFV ↓
RPV	SOF ↔; RPV ↔	LDV ↔; RPV ↔	VEL↔; RPV↔	No PK data (clinical trial data ok)	PAR ↑; RPV ↑	GZP & EBR ↔; RPV ↔
ETV	No data	No data	No Data	DCV ↓**	No data	No data
RAL	SOF ↔; RAL ↔	LDV ↔; RAL ↔	VEL↔; RAL↔	No PK data (clinical trial data ok)	PrOD ↔; ↑ RAL	GZP & EBR ↔; RAL ↑
ELV/cob	Cobi ↑; SOF ↑[a]	LDV ↑; SOF ↑[a]	VEL ↑; COBI↑	No data	No data	GZP & EBV ↑, ATV ↑
DTG	No data	LDV ↔; DOL ↔	VEL↔; RAL↔	DCV ↔; TFV ↔	PAR ↓; DOL ↑	GZP & EBR ↔; DOL↑
MVC	No data	No data	No Data	No data	No data	No data
TDF	SOF ↔;TFV ↔	LDV↔; TFV ↑	VEL↔; TFV ↑	DCV ↔; TFV ↔	PrOD ↔; TFV ↔	GZP & EBR ↔; TFV ↑
TAF	SOF ↔;TFV ↑	LDV↔;TFV ↑	VEL↔;TFV ↑	No Data	No Data	No Data

http://www.hcvguidelines.org/full-report/unique-patient-populations-patients-hivhcv-coinfection

- Decrease DCV dose to 30mg QD, **Increase DCV dose to 90mg QD, *** 3D + EFV led to premature study discontinuation due to toxicities,

[a] only of concern when coadministered with TDF

Adapted from Jennifer Kiser

ART with least interactions with DAAs

	SOF	Ledipasvir	VEL	Daclatasvir	P/r/O + D	EBR/GZP
ATV/r	No data	LDV ↑; ATV ↑[a]	VEL ↑; ATV↑[a]	DCV ↑*	ATV ↑; PAR ↑	GZP & EBV ↑, ATV ↑
DRV/r	SOF ↑; DRV ↔	LDV ↑; DRV ↔[a]	VEL↔; DRV ↔[a]	DCV ↑, DRV ↔	DRV ↓; PAR ↓/↑	GZP & ELB ↑; DRV ↔
LPV/r	No data	No data	VEL↔; LPV↔[a]	DCV ↑, LPV↔	LPV ↔; PAR ↑	GZP & EBR ↑; DRV ↔
EFV	SOF ↔; EFV ↔	LDV↓ EFV↓	VEL↓; EFV↓	DCV ↓**	No PK data**	GZP & EBR↓, EFV ↓
RPV ★	SOF ↔; RPV ↔	LDV ↔; RPV ↔	VEL↔; RPV↔	No PK data (clinical trial data ok)	PAR ↑; RPV ↑	GZP & EBR ↔; RPV ↔
ETV	No data	No data	No Data	DCV ↓**	No data	No data
RAL ★	SOF ↔; RAL ↔	LDV ↔; RAL ↔	VEL↔; RAL↔	No PK data (clinical trial data ok)	PrOD ↔; ↑ RAL	GZP & EBR ↔; RAL ↑
ELV/cob	Cobi ↑; SOF ↑[a]	LDV ↑; SOF ↑[a]	VEL ↑; COBI↑	No data	No data	GZP & EBV ↑, ATV ↑
DTG ★	No data	LDV ↔; DOL ↔	VEL↔; RAL↔	DCV ↔; TFV ↔	PAR ↓; DOL ↑	GZP & EBR ↔; DOL↑
MVC	No data	No data	No Data	No data	No data	No data
TDF	SOF ↔;TFV ↔	LDV↔; TFV ↑	VEL↔; TFV ↑	DCV ↔; TFV ↔	PrOD ↔; TFV ↔	GZP & EBR ↔; TFV ↑
TAF	SOF ↔;TFV ↑	LDV↔;TFV ↑	VEL↔;TFV ↑	No Data	No Data	No Data

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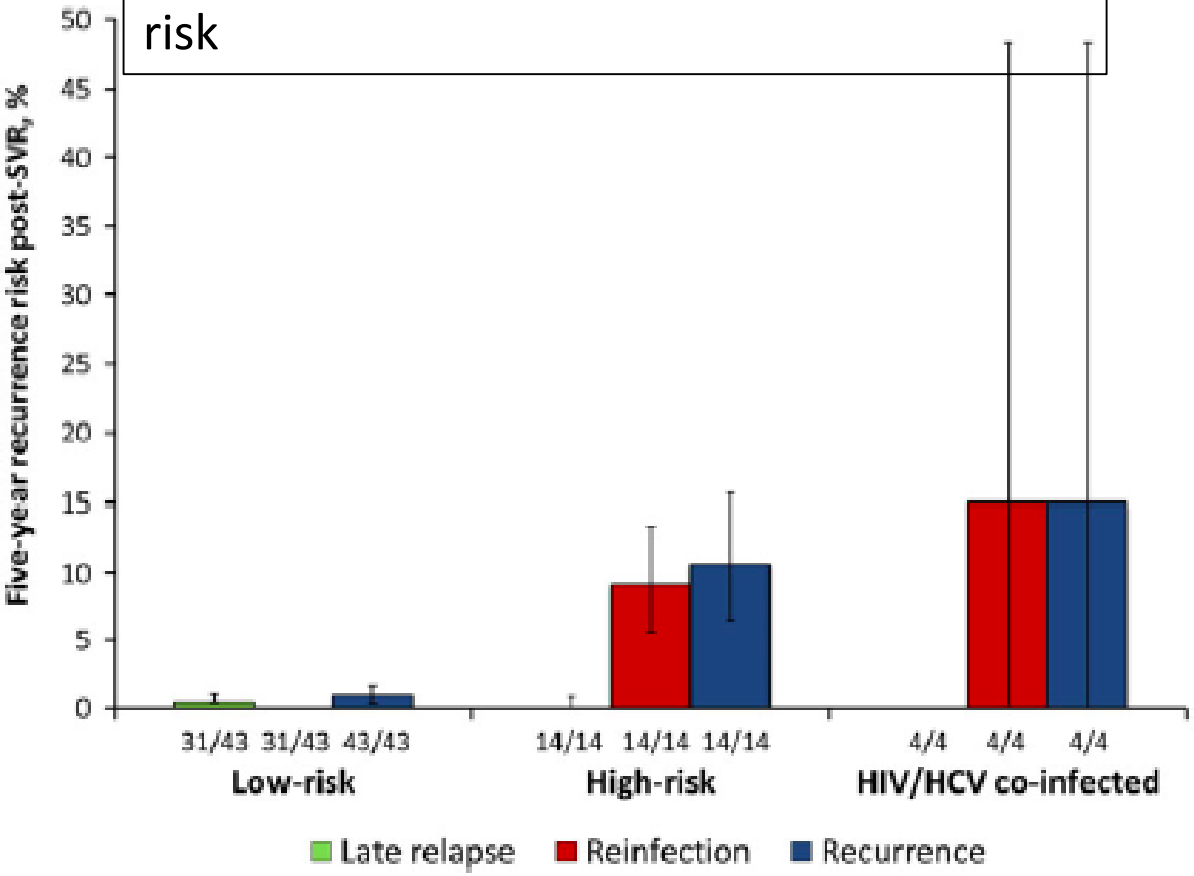
The bad news: Reinfection in HIV+ MSM

Meta-analysis of 5 year HCV reinfection risk



NEAT European Cohort HIV+ MSM

- 25% reinfection rate over 12 yrs
- 7.3/100py

Not Just HIV+ MSM at risk:

- MSM on PREP with sexually acquired HCV

Simmons CID March 2016, Inglitz J Hep 2016, Volk CID 2015:60

2016 HCV Report card

- Whom to treat: <u>everyone</u>
  - *"Evidence clearly supports treatment in all HCV-infected persons except those with limited life expectancy (less than 12 months) due to non liver related comorbid conditions" (AASLD/IDSA guidelines)*
- First pangenotype, single pill therapy approved
- Duration for most patients: 8-12 weeks
- >95% cure in vast majority of patients
- Most do <u>not</u> require ribavirin
- Effective options for historically hardest to treat populations
  - HIV/HCV coinfected
  - Active injection drug users & those on opiate substitution therapy
  - Cirrhotics, including decompensated
  - Prior treatment failures
  - Renal failure
  - Genotype 3

Thank you!