



Third Joint Conference  
of the  
British HIV Association (BHIVA)  
with the  
British Association for Sexual Health and HIV (BASHH)

**1-4 April 2014**

Arena and Convention Centre · Liverpool

THIRD JOINT CONFERENCE  
OF BHIVA AND BASHH 2014



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# Seminal HCV RNA level may mirror dynamics of plasma HCV RNA in HIV-positive men with acute HCV

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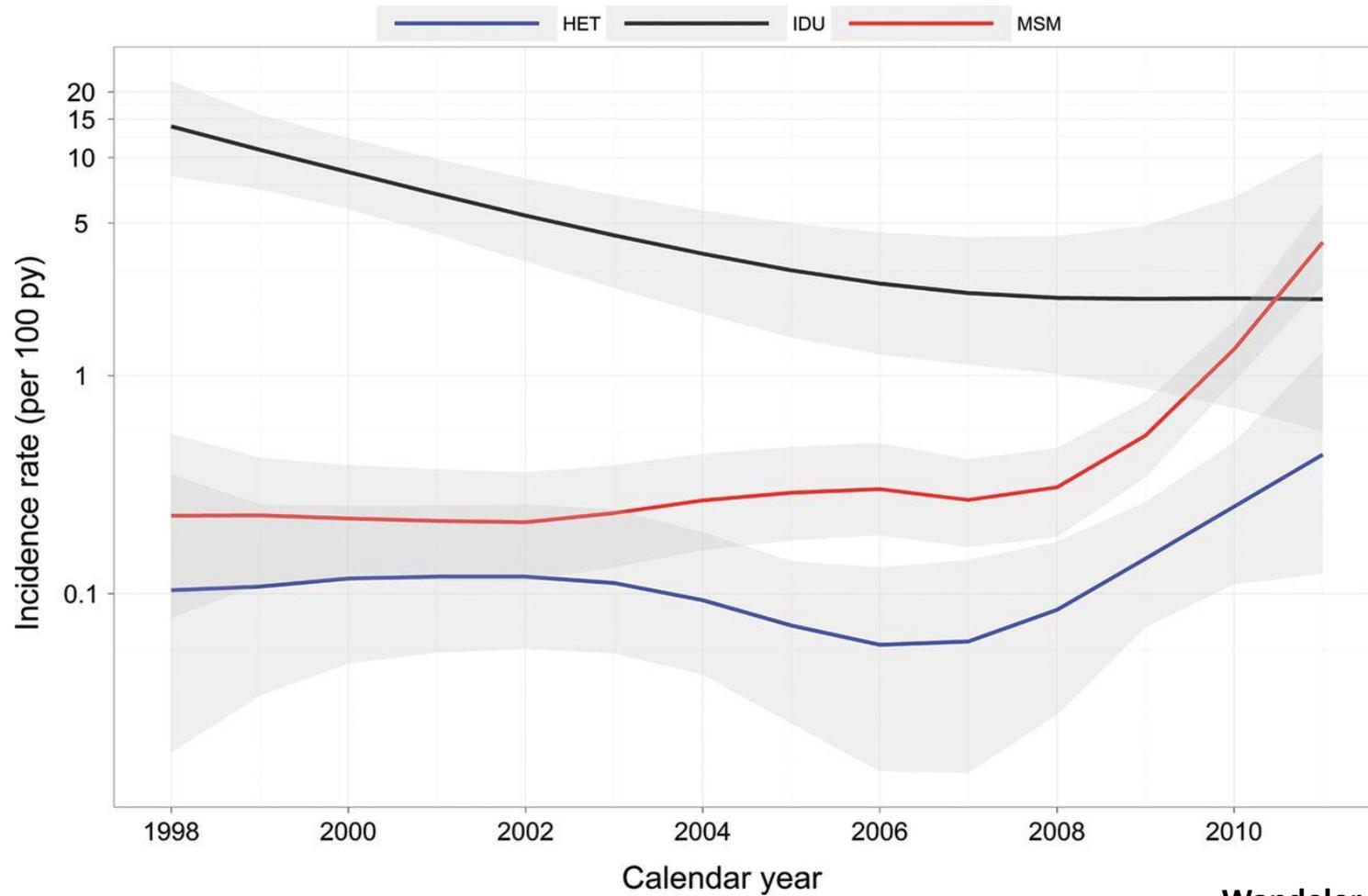


# Background



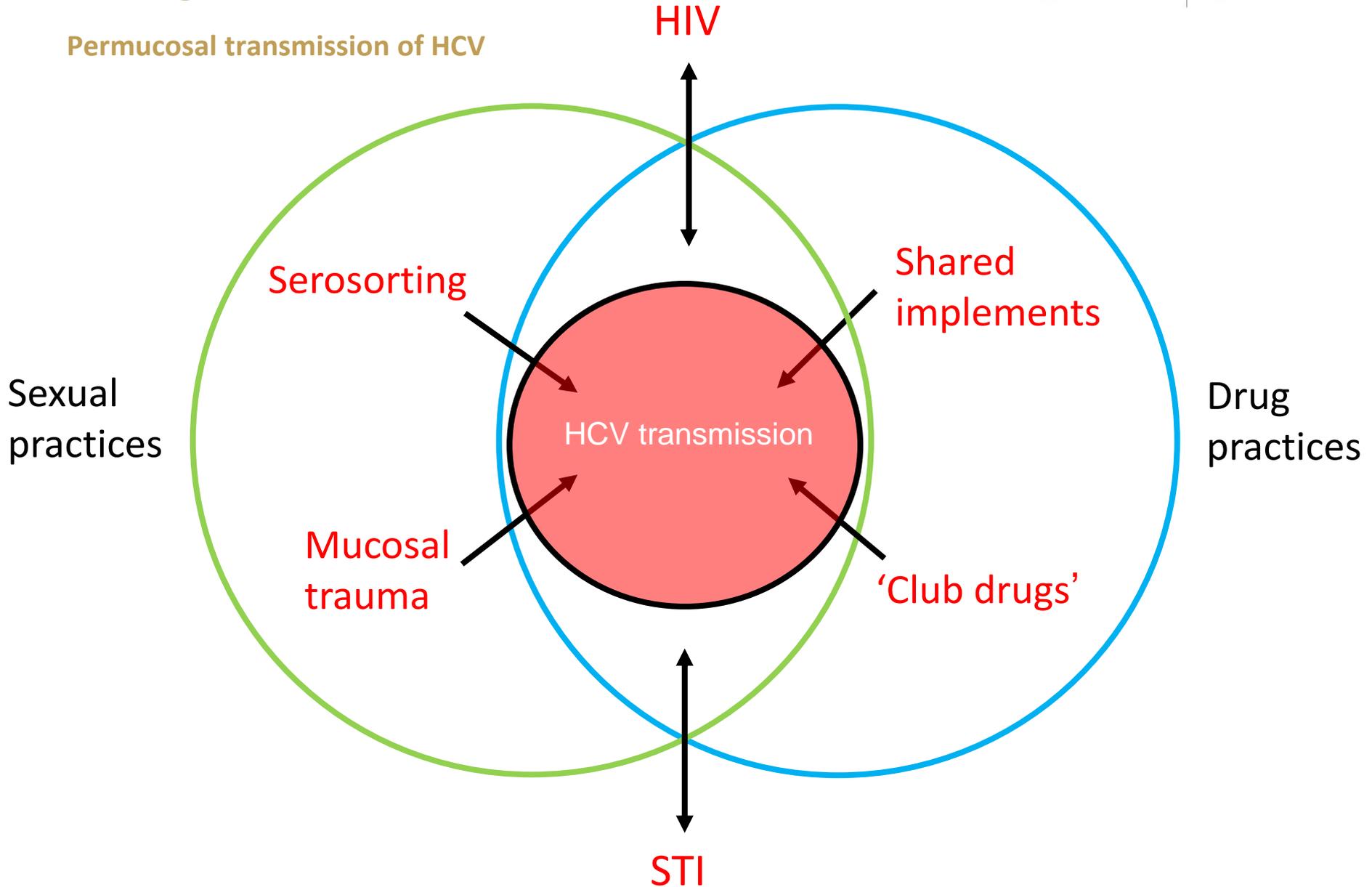
# Background

## Swiss HIV+ Cohort



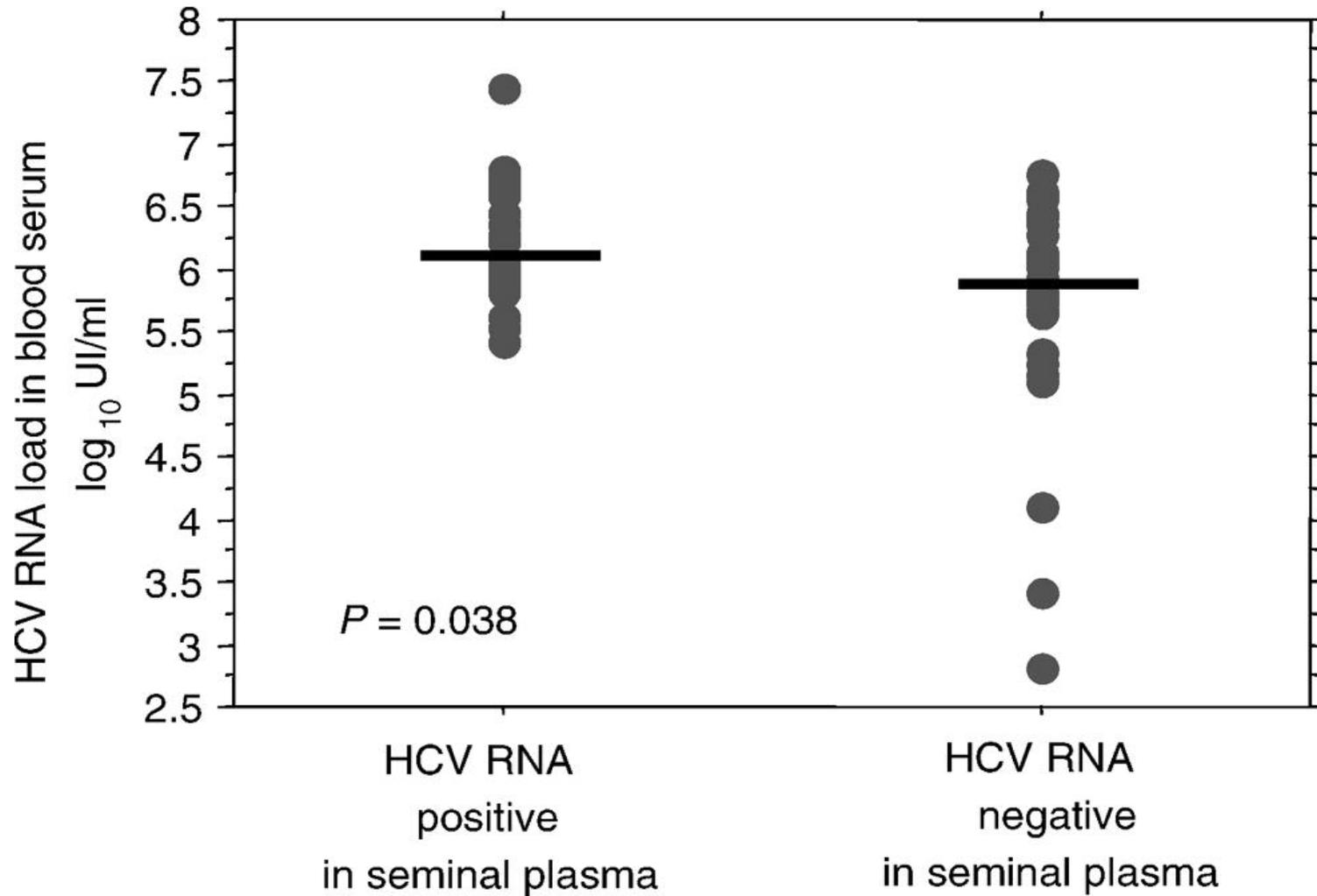
# Background

Per mucosal transmission of HCV



# Background

## Seminal HCV RNA in chronic HCV/HIV-coinfection



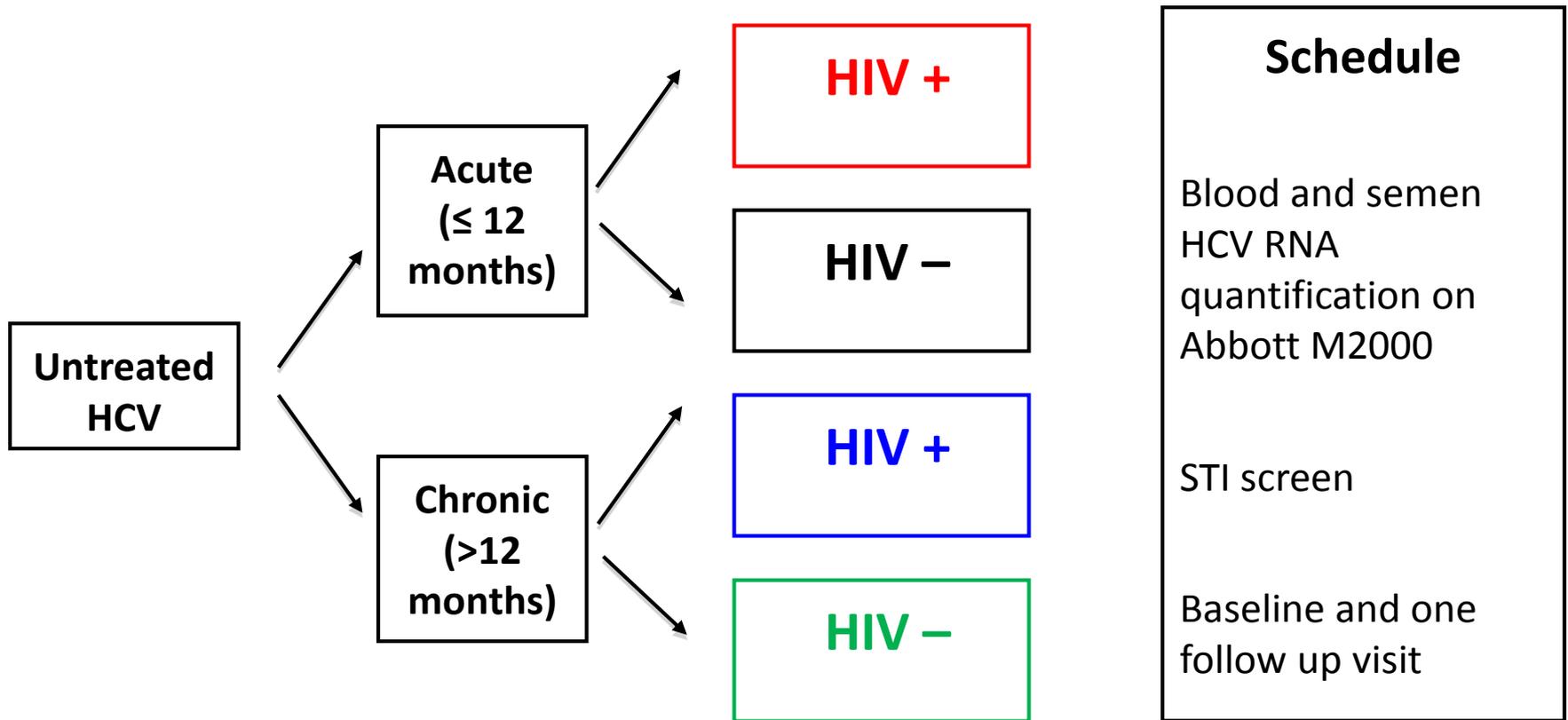
# Aim

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- ▶ To characterise HCV RNA dynamics in the semen of HIV-infected men with acute HCV

# Methods

## Prospective cohort study



# Results

Table of baseline demographics

	AHCV/HIV+	CHCV/HIV+	CHCV/HIV-	All
<b>Number of men</b>	18 (30)	22 (37)	26 (43)	<b>66 (100)</b>
<b>Median age, years</b>	45 (37-49)	50 (44-54)	52 (47-56)	<b>49 (44-53)</b>
<b>MSM</b>	18 (100)	21 (96)	7 (27)	<b>46 (70)</b>
<b>Route of HCV acquisition</b>				
<b>Injection drug use</b>	8 (44)	19 (86)	15 (58)	<b>42 (64)</b>
<b>Sexual</b>	10 (56)	3 (14)	3 (12)	<b>16 (24)</b>
<b>Median blood HCV RNA, log IU/mL</b>	5.8 (4.4-6.2)	6.4 (5.5-6.7)	6.1 (5.6-6.4)	<b>6.1 (5.5-6.5)</b>
<b>HCV genotype</b>				
<b>1a</b>	10 (56)	16 (73)	13 (50)	<b>39 (59)</b>
<b>3a</b>	5 (28)	3 (14)	9 (35)	<b>17 (26)</b>
<b>Median Fibroscan score, kPa</b>	6.6 (6.1-8.6)	7.0 (5.7-12.2)	9.7 (6.9-14.3)	<b>7.6 (6.1-11.8)</b>
<b>Median volume of seminal plasma, mL</b>	1 (0.5-1)	1 (0.5-2)	1 (0.4-2)	<b>1 (0.5-2)</b>
<b>Median CD4 cell count, cells/mm<sup>3</sup></b>	576 (337-716)	644 (456-1105)	NA	<b>598 (410-788)</b>
<b>Number receiving cART</b>	15 (83)	20 (91)	NA	<b>35 (88)</b>
<b>No. on cART with HIV-1 RNA &lt;50 IU/mL</b>	12 (80)	20 (100)	NA	<b>32 (80)</b>
<b>Median ALT, U/L</b>	122 (60-374)	76 (44-140)	87 (48-171)	<b>91 (48-174)</b>
<b>Infectious syphilis</b>	3 (17)	2* (9)	0	<b>5 (8)</b>
<b>Full STI screen performed</b>	16 (89)	20 (91)	20 (77)	<b>56 (85)</b>
<b>Any STI</b>	8 (50)	2* (10)	1 (5)	<b>11 (20)</b>

Brackets denote % or IQR. \* One man had both syphilis and LGV

# Results

## HCV detection in semen

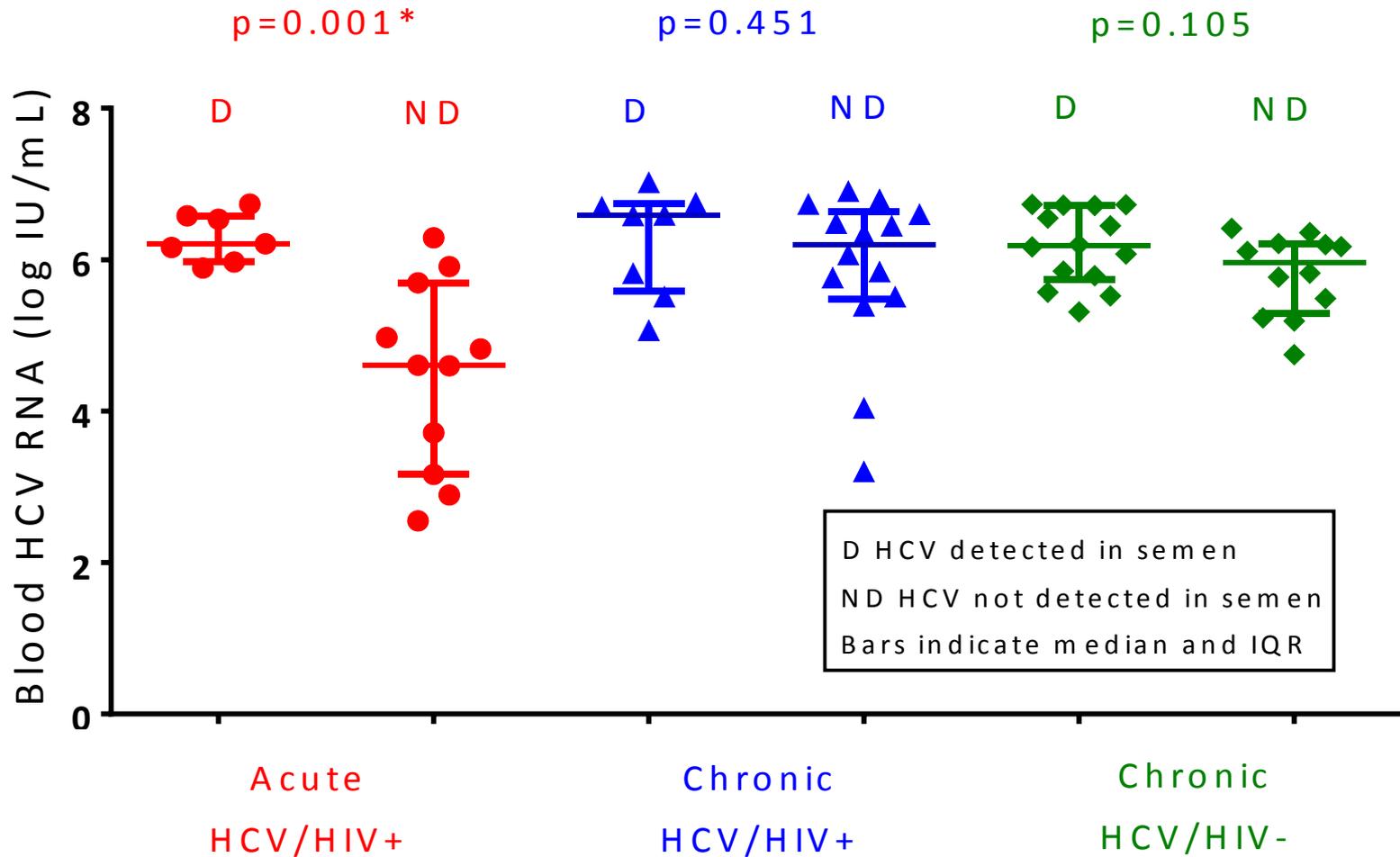
	HCV RNA in Seminal Plasma		p value
	Present	Absent	
<b>Number of individuals</b>	29 (44)	37 (56)	
<b>Age, years</b>	50 (45-53)	48 (44-55)	0.736
<b>HIV-infected</b>	15 (52)	25 (68)	0.191
<b>Acute HCV</b>	7 (24)	11 (30)	0.613
<b>Median duration of AHCV, weeks</b>	14 (8-22)	9 (5-30)	0.783
<b>Median blood HCV RNA, log IU/mL</b>	6.2 (5.8-6.7)	5.8 (4.8-6.3)	0.002*
<b>HIV parameters</b>			
<b>CD4 cell count, cells/mm<sup>3</sup></b>	580 (324-754)	663 (451-1017)	0.170
<b>HIV RNA &lt; 50 IU/mL</b>	11 (73)	21 (84)	0.444
<b>HCV genotype</b>			
<b>1a</b>	15 (52)	24 (65)	0.281
<b>3a</b>	8 (28)	9 (24)	0.764
<b>Median volume of seminal plasma, mL</b>	1 (0.5-2)	1 (0.5-1)	0.143
<b>Median Fibroscan score, kPa</b>	7.6 (6.2-13.6)	7.8 (6.1-11.8)	0.705
<b>Sexual mode of HCV acquisition</b>	6 (21)	10 (27)	0.551
<b>STI</b>	3 (12)	8 (26)	0.319

Brackets denote % or IQR. Statistical testing by Chi<sup>2</sup>, Fishers or Mann-Whitney. \*p<0.05



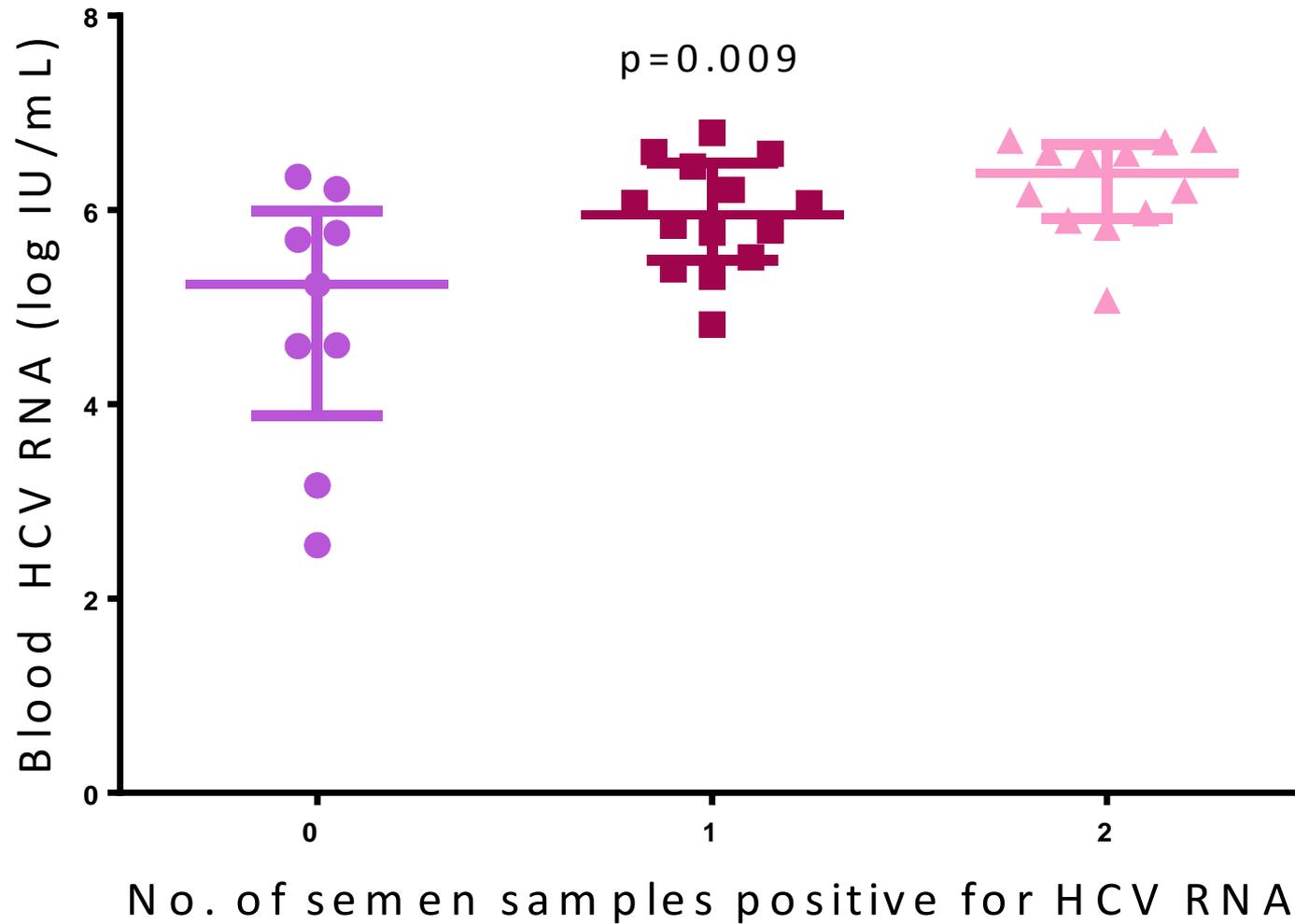
# Results

## Detection of semen HCV RNA



# Results

## Longitudinal shedding of HCV RNA in semen



## Conclusion

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- Semen HCV RNA was detected in 44% of men at baseline.
- There is a possible relationship between HCV RNA levels in semen and blood in HIV-infected men with acute HCV.
- In the setting of early acute HCV with high blood RNA levels, this could lead to heightened infectiousness, contributing to sexual transmission.
- Further studies involving men with high blood HCV RNA levels are required.

# Acknowledgements

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## Additional slide

### HCV RNA in seminal cell pellet

Participant ID	HCV RNA (log IU/mL)		
	Blood	Seminal cell pellet	Seminal plasma
5	2.6	ND	ND
75	2.9	ND	ND
27	3.2	ND	ND
68	4.0	ND	ND
31	5.2	ND	ND
60	5.8	ND	1.8
19	6.0	2.4	3.0
7	6.2	ND	1.8
10	6.2	2.4	3.0
40	6.6	3.4	3.7
18	6.7	2.8	3.4

## Additional slide

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Acute HCV/HIV-coinfection  
Unpublished  
Turner 2010

HCV RNA shedding in semen

- 1/9 (11%) men with acute HCV
- 2/10 (20%) men with chronic HCV
- No difference in acute and chronic



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