Cost- Benefit of treatment in F1 patients

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Cost-Benefits in F1

- Conflicts of interest

- Fees received from AbbVie, Gilead, GSK, Merck

Cost – Benefits in F1

- Cost-effectiveness can be difficult
  - Cost per QALY, discounts, additional costs, additional benefits
- Cost – effectiveness can be easy
  - Compare costs and benefits

Cost – Benefits in F1

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  - Cost per QALY, discounts, additional costs, additional benefits
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I will take the easy approach

Cost-**benefits** in mild disease

- Avoidance of liver complications
- Avoidance of non-liver complications
- Prevention of transmission

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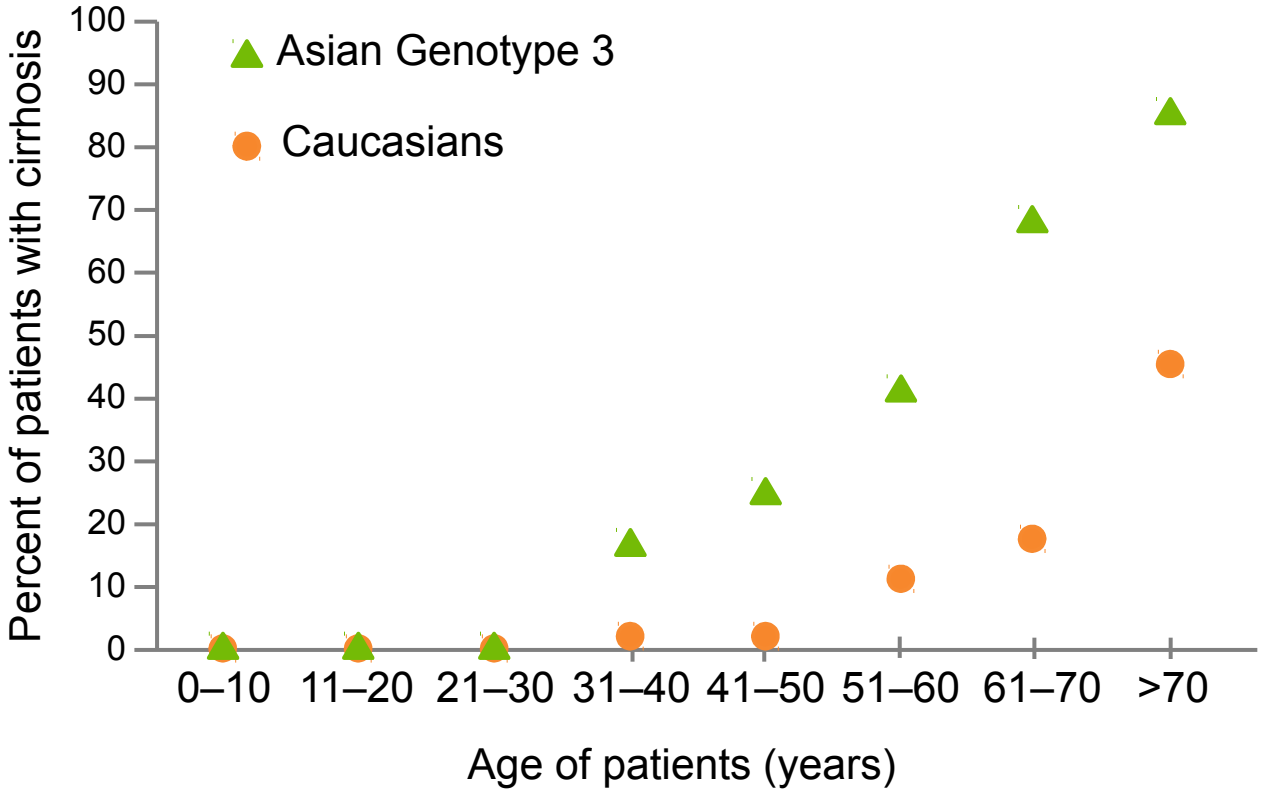
HCV will eventually cause liver damage



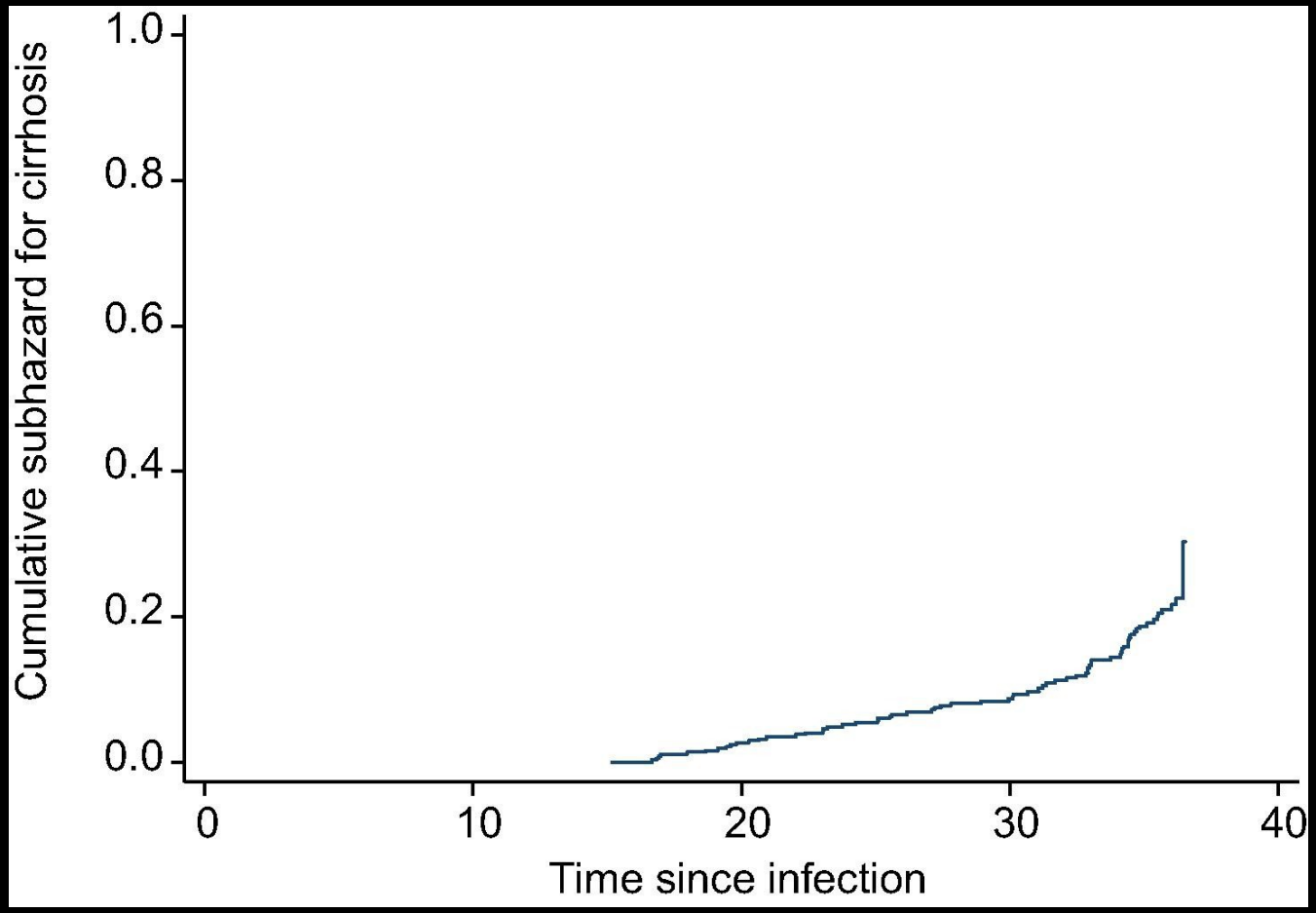
Adapted from D'Souza. Clin Gastroenterol Hepatol 2005;3:910–17

Disease outcomes in a cohort of women in Ireland infected by hepatitis C-contaminated anti-D immunoglobulin during 1970s

Patricia Garvey, Niamh Murphy, Paula Flanagan, Aline Brennan, Garry Courtney, Orla Crosbie, John Crowe, John Hegarty, John Lee, Margaret McIver, Carol McNulty, Frank Murray, Niamh Nolan, Cliona O'Farrelly, Stephen Stewart, Michele Tait, Suzanne Norris, Lelia Thornton

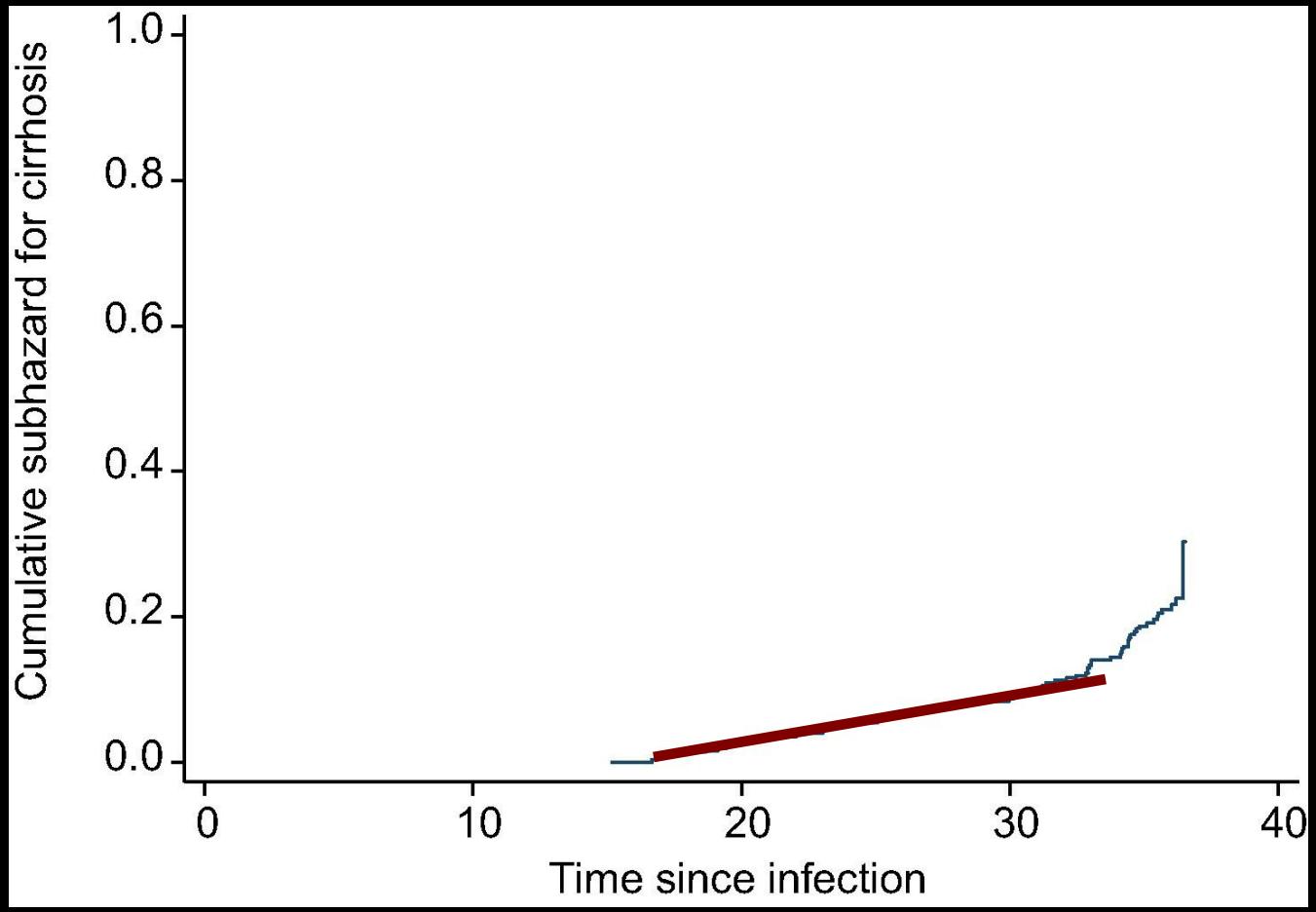
Journal of Hepatology
Volume 67, Issue 6, Pages 1140-1147 (December 2017)
DOI: 10.1016/j.jhep.2017.07.034

Fig. 4



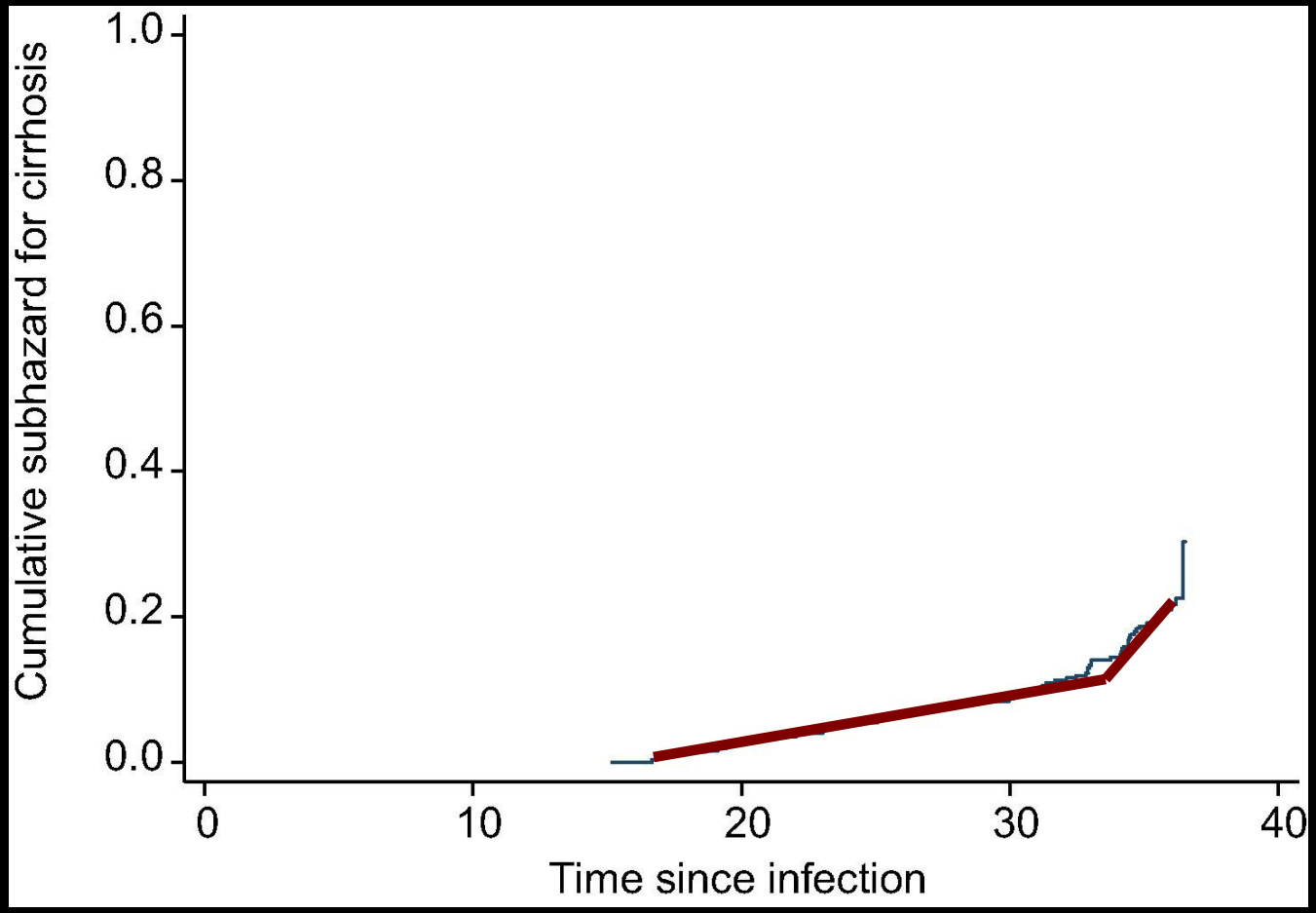
Journal of Hepatology 2017 67, 1140-1147DOI: (10.1016/j.jhep.2017.07.034)

Fig. 4



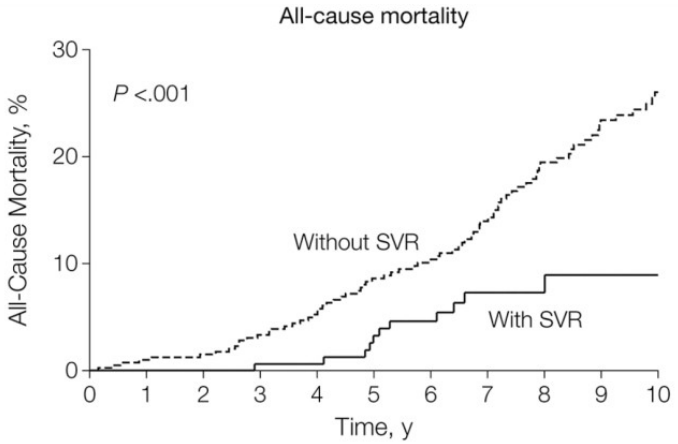
Journal of Hepatology 2017 67, 1140-1147DOI: (10.1016/j.jhep.2017.07.034)

Fig. 4



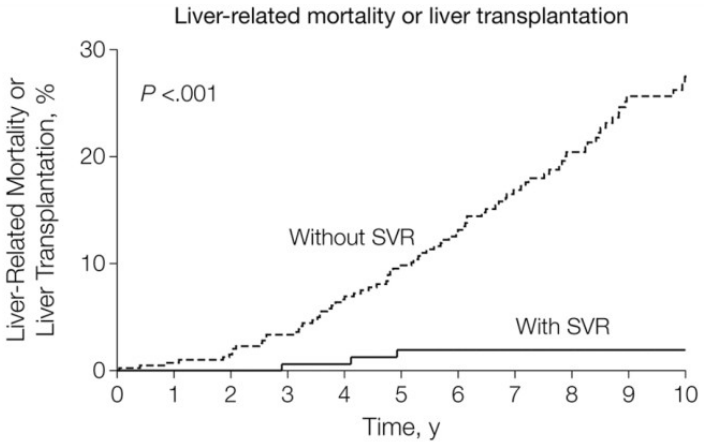
Journal of Hepatology 2017 67, 1140-1147DOI: (10.1016/j.jhep.2017.07.034)

HCV clearance stops liver complications



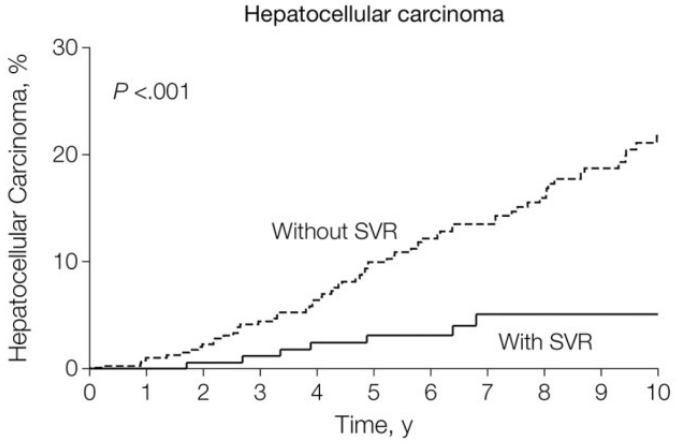
No. at risk

Without SVR	405	393	382	363	344	317	295	250	207	164	135
With SVR	192	181	168	162	155	144	125	88	56	40	28



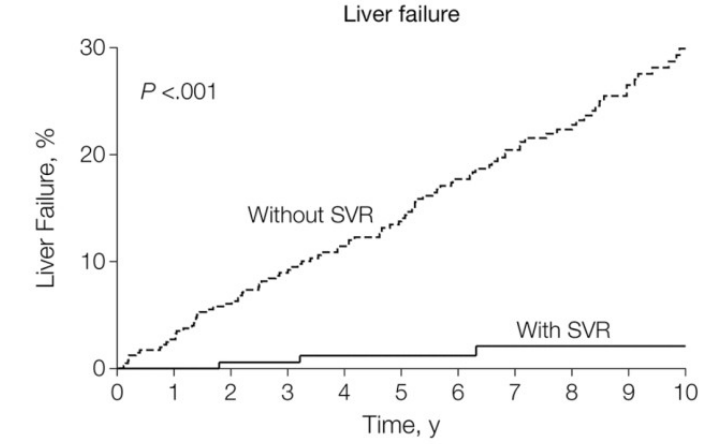
No. at risk

Without SVR	405	392	380	358	334	305	277	229	187	146	119
With SVR	192	181	168	162	155	144	125	88	56	40	28



No. at risk

Without SVR	405	390	375	349	326	294	269	229	191	151	122
With SVR	192	181	167	161	152	142	124	86	54	39	27

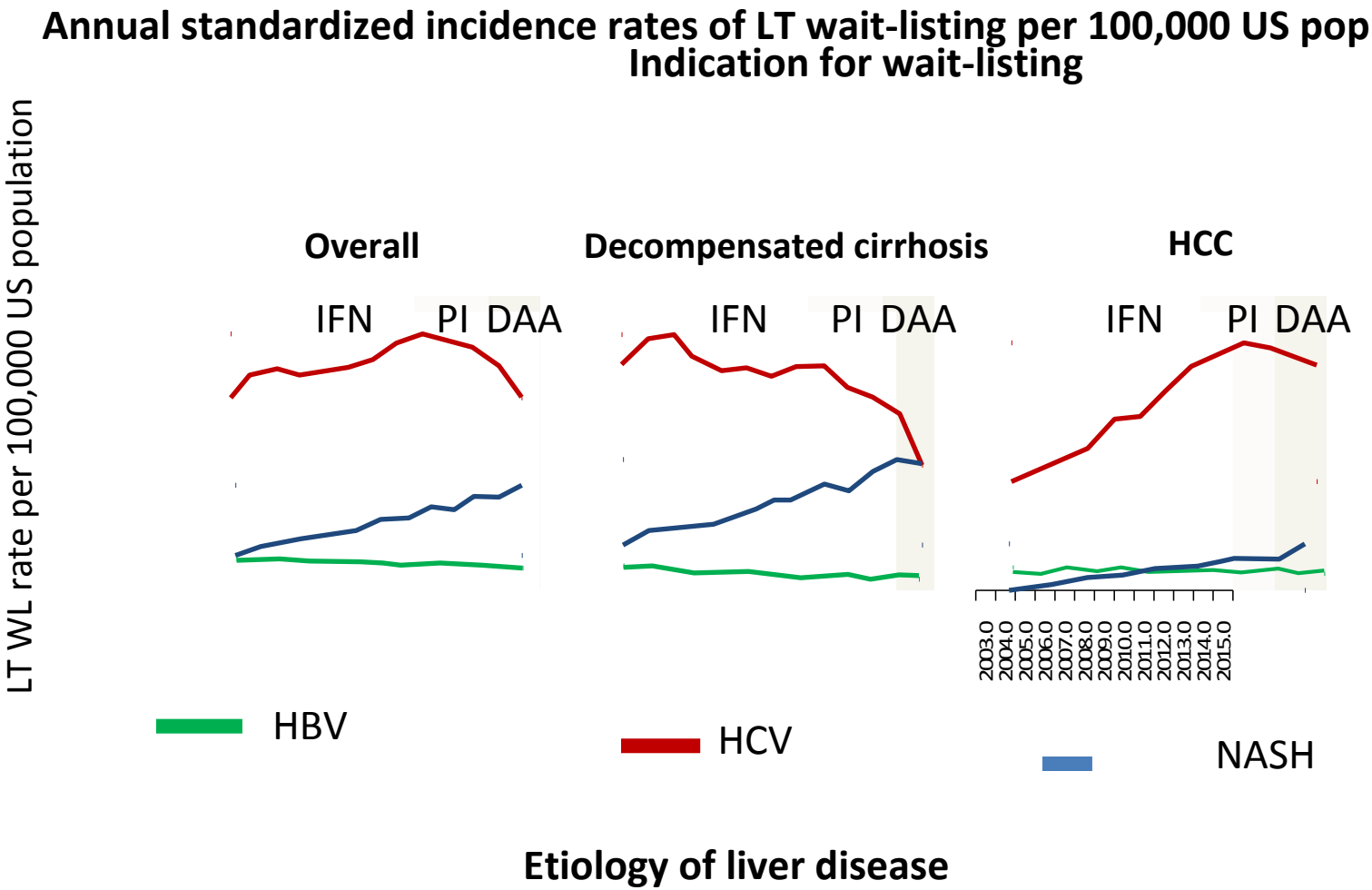


No. at risk

Without SVR	405	384	361	337	314	288	259	216	184	143	113
With SVR	192	180	166	160	152	141	123	88	56	40	28

1. Van der Meer AJ et al. JAMA. 2012;308(24):2584-2593.

Reduction in liver transplant wait-listing in the era of DAA therapy



Flemming

Cost-**benefits** in mild disease

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- Avoidance of non-liver complications
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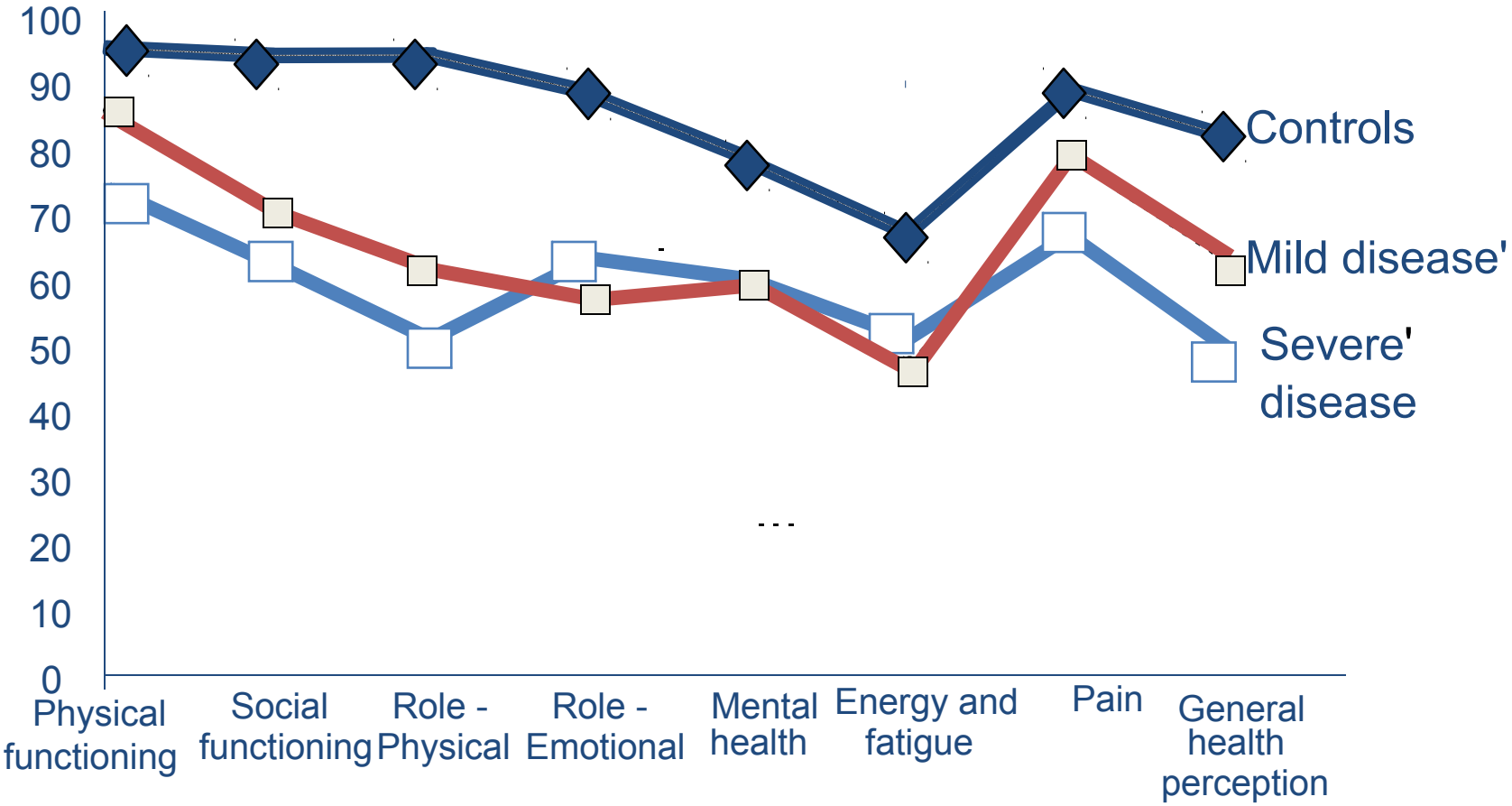
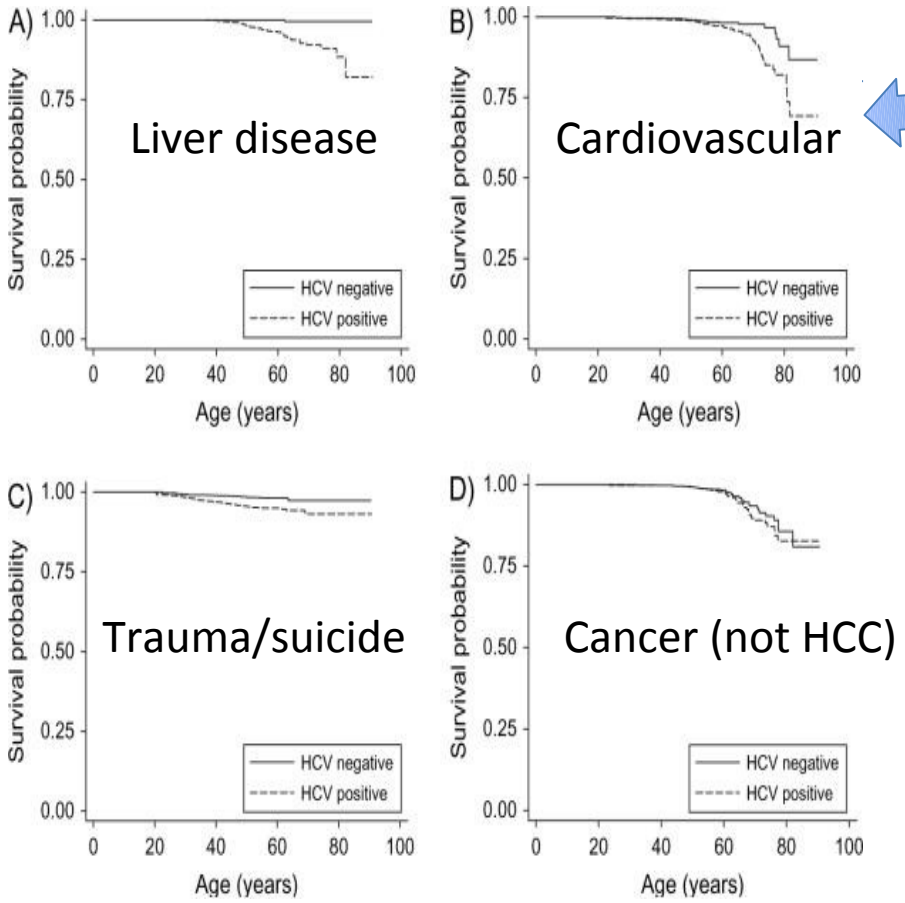
Patients with chronic HCV feel unwell



Foster et al Hepatology 1998

Age specific HCV mortality USA 1991-2003



Guiltman et al Am J Epidemiol 2008;167:743-50

HCV eradication reduces the occurrence of major adverse cardiovascular events (MACE) in hepatitis C cirrhotic patients

Predictors of MACE (MI, IHD, CVA, Peripheral arterial disease) in 878 patients with compensated HCV-related cirrhosis Multivariate Cox proportional hazards model

Features	HR	95% CI	P-value
Arterial hypertension	3.24	1.78–5.91	<0.001
Tobacco consumption			<0.001
Never	Ref		
Past	1.75	0.76–3.91	0.18
Ongoing	4.20	2.11–8.64	<0.001
Ethnic origin			<0.001
European	Ref		
African	1.14	0.36–2.80	0.80
Asian	9.20	2.46–24.95	0.003
Serum albumin ≤35 g/l	2.78	1.30–5.56	0.009
SVR	0.35	0.09–0.97	0.044

SVR is associated with a reduced rate of cardiovascular events

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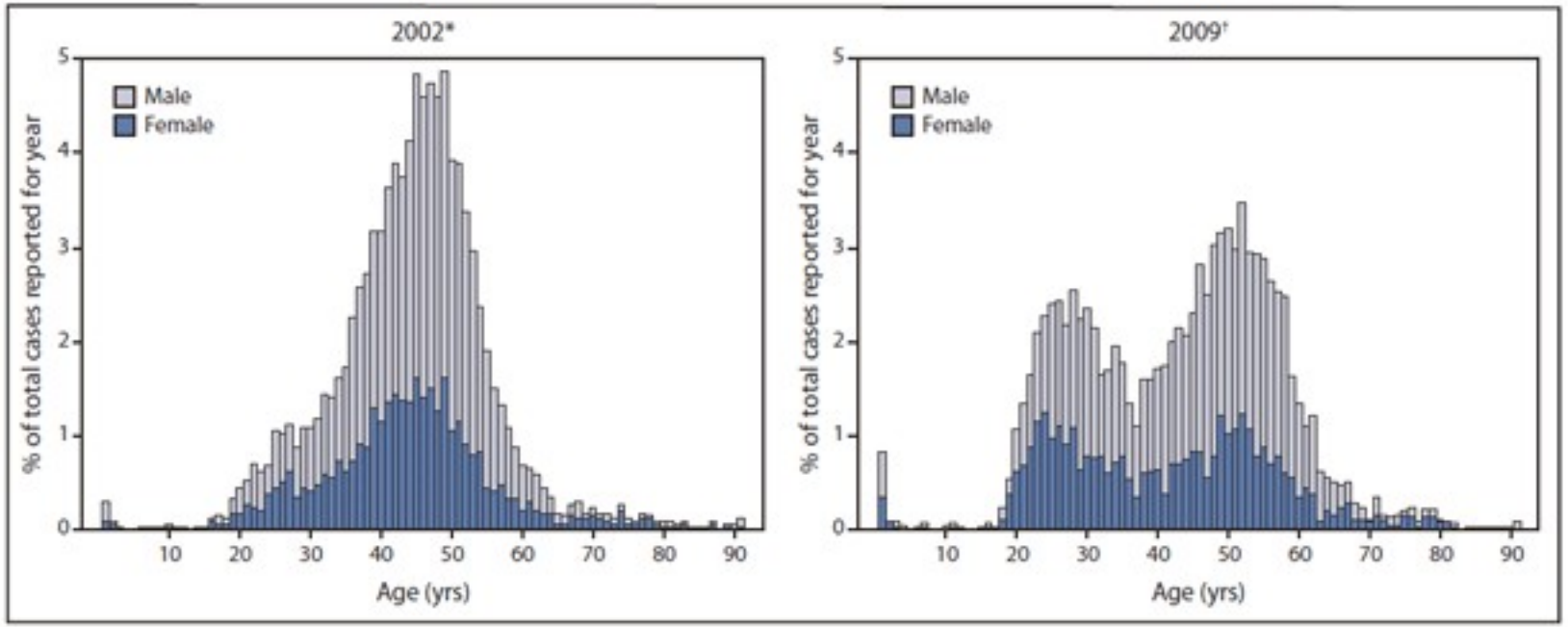
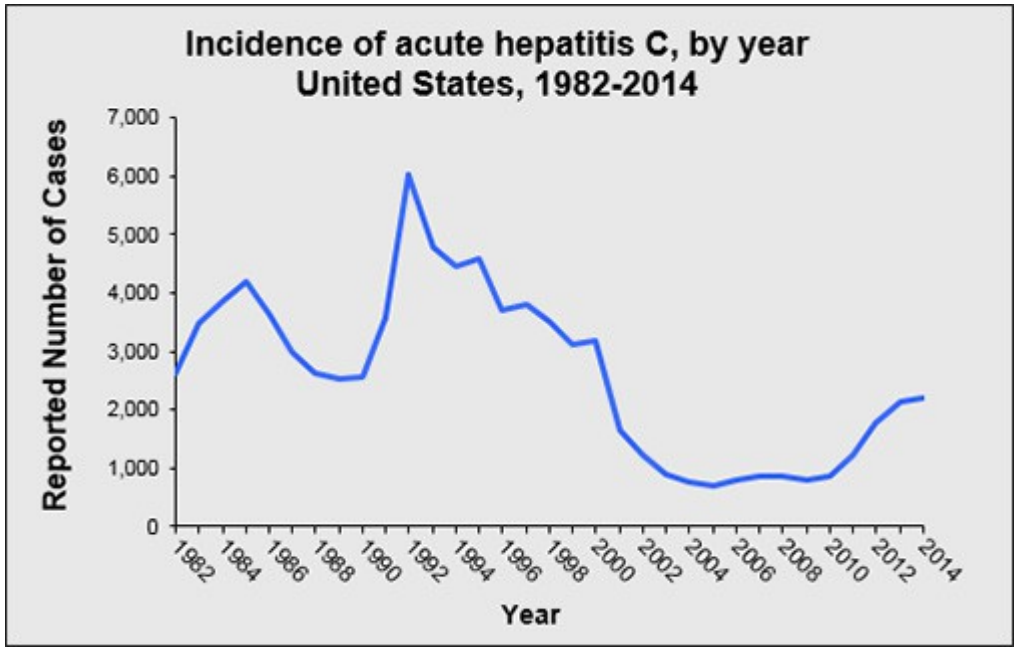
What happens if you don't treat early HCV?



Age distribution of newly reported confirmed cases of hepatitis C virus infection --- Massachusetts, 2002 and 2009

HCV is on the rise!

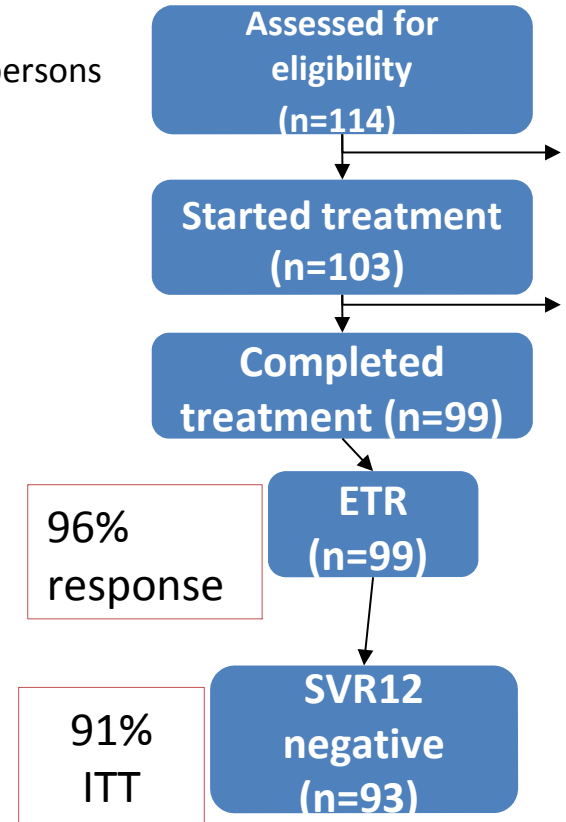


https://www.cdc.gov/hepatitis/statistics/index.htm

SIMPLIFY: Efficacy and safety of SOF/VEL in people with chronic HCV infection and recent injecting drug use

- International study of SOF/VEL for 12 weeks in persons with recent IDU (< 6 months)
- 19 sites (Australia/New Zealand, NA, Europe)

Characteristics, n (%)	SOF/VEL (12 wks) n=103
Age <40 years	25 (24)
Female sex	29 (28)
OST and injecting drug use (in last month)	
No OST, no injecting	12 (12)
No OST, injecting	33 (32)
OST, no injecting	15 (15)
OST, injecting	43 (42)
HCV genotype	
1	36 (35)
2	5 (5)
3	60 (58)
4	2 (2)
Fibrosis stage (METAVIR)	
F0–F1	59 (62)
F2–F3	27 (28)
F4	9 (9)

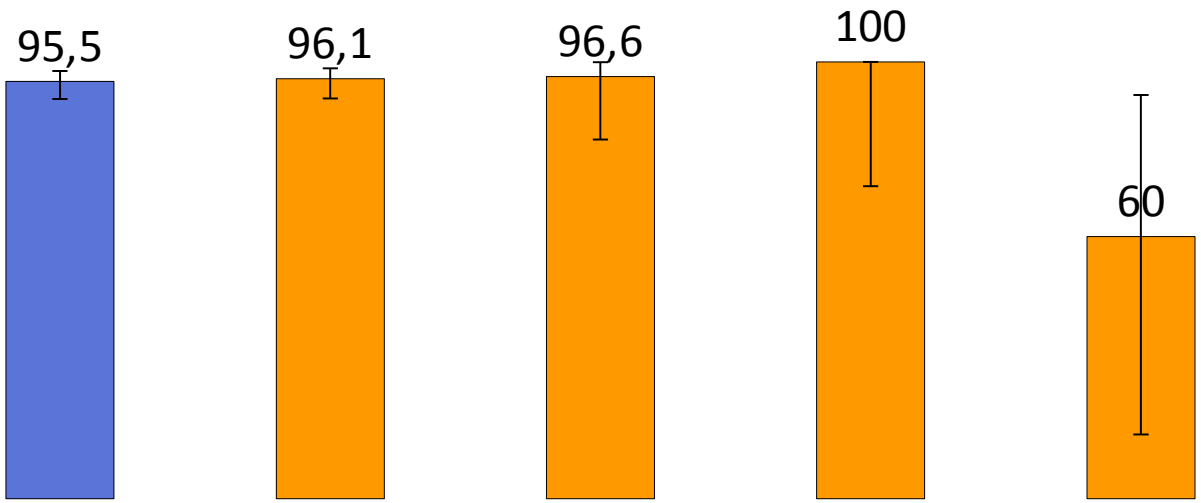


- No HCV relapse or re-infection to date

SOF/VEL for 12 weeks was effective in persons with recent IDU
Additional follow-up is needed to define risk of reinfection

Grebely

Trial of Grazoprevir/Elbasvir in Injecting drug users



	All GT†	GT1a*	GT1b	GT4	GT6
	189/198	147/153	28/29	11/11	3/5
Failures					
Relapse	7	4	1	0	2
Discontinuation	2	2	0	0	0
Reinfection – counted as success					
	5	3	0	0	2
LTFU or discontinued unrelated to Virologic Failure – excluded from mFAS analysis					
	3	1	1	1	0

*Includes one subject with mixed infection (GT1a and GT1b) who achieved SVR12

Incidence of reinfection

Through FW12

Through FW24

Through >FW48

From End of Treatment Through Observation Visit 1		
• 8 reinfections	• 197.5 person years	• 4.0 reinfections per 100 person years (95% CI: 1.7, 8.0)
From End of Treatment Through Observation Visit 1 (Includes only those patients with persistent HCV RNA)		
• 5 reinfections	• 199.0 person years	• 2.5 reinfections per 100 person years (95% CI: 0.8, 5.9)

Cost-**benefits** in mild disease

- Avoidance of liver complications PROVEN
  (and avoids long term follow up costs)
- Avoidance of non-liver complications PROVEN
- Prevention of transmission DATA SUPPORTED

Cost-benefits in mild disease

Costs of therapy (drugs /admin) MINUS costs of follow up

Costs vary by country but in ALL countries drug price should no longer be rate limiting

Cost – benefits of treating mild disease

- Treating mild disease is always cost-effective
- Is it affordable?
- If treating mild disease is not affordable in your country then a focus on severe disease may be necessary

Cost – Benefits in Mild Disease

- Therapy in mild disease is always cheaper, easier and avoids long term follow up costs
- For most countries the drugs are priced so that therapy in mild disease is affordable
- If the drugs are not affordable then a focus on severe disease may be required