The future of liver transplantation for viral hepatitis

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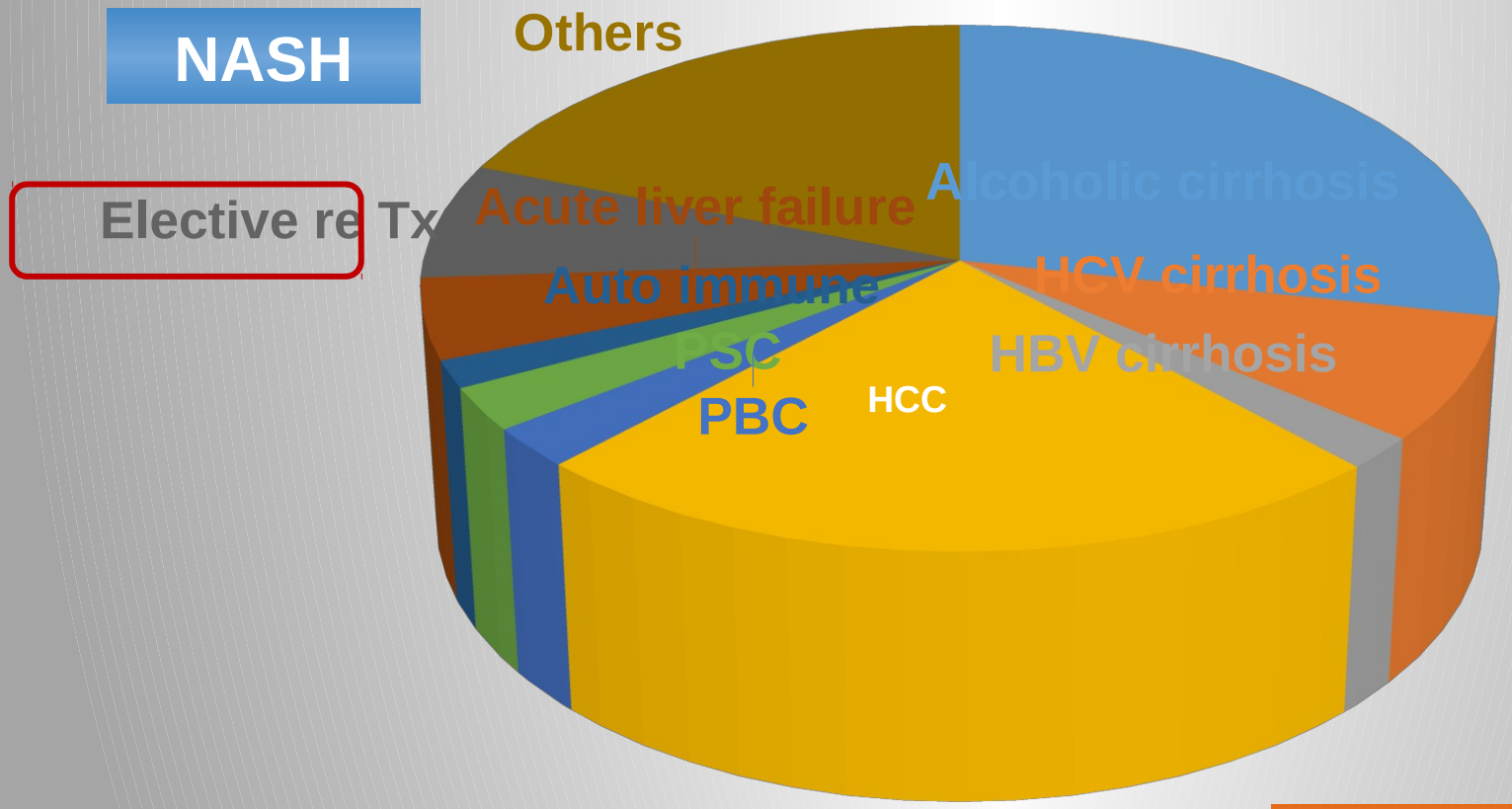
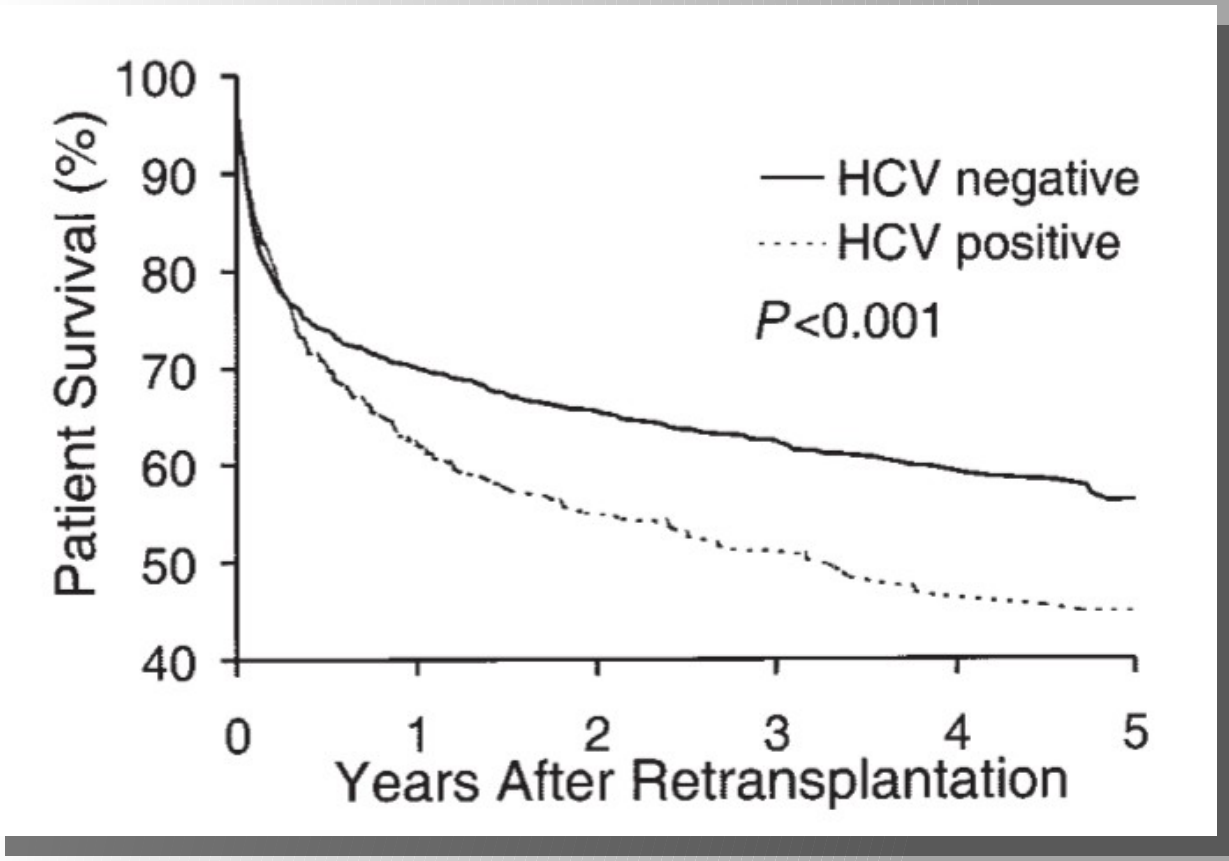
Liver transplantation in France 2013: the burden of HCV



HCV = 20%

The burden of HCV after transplantation

- Almost all candidates HCV-RNA pos
- Post-transplant recurrence almost universal
- Fibrosis accelerated by immunosuppression
- IFN-based therapy ineffective and poorly tolerated
- Lower graft and patient's survival rate after transplantation



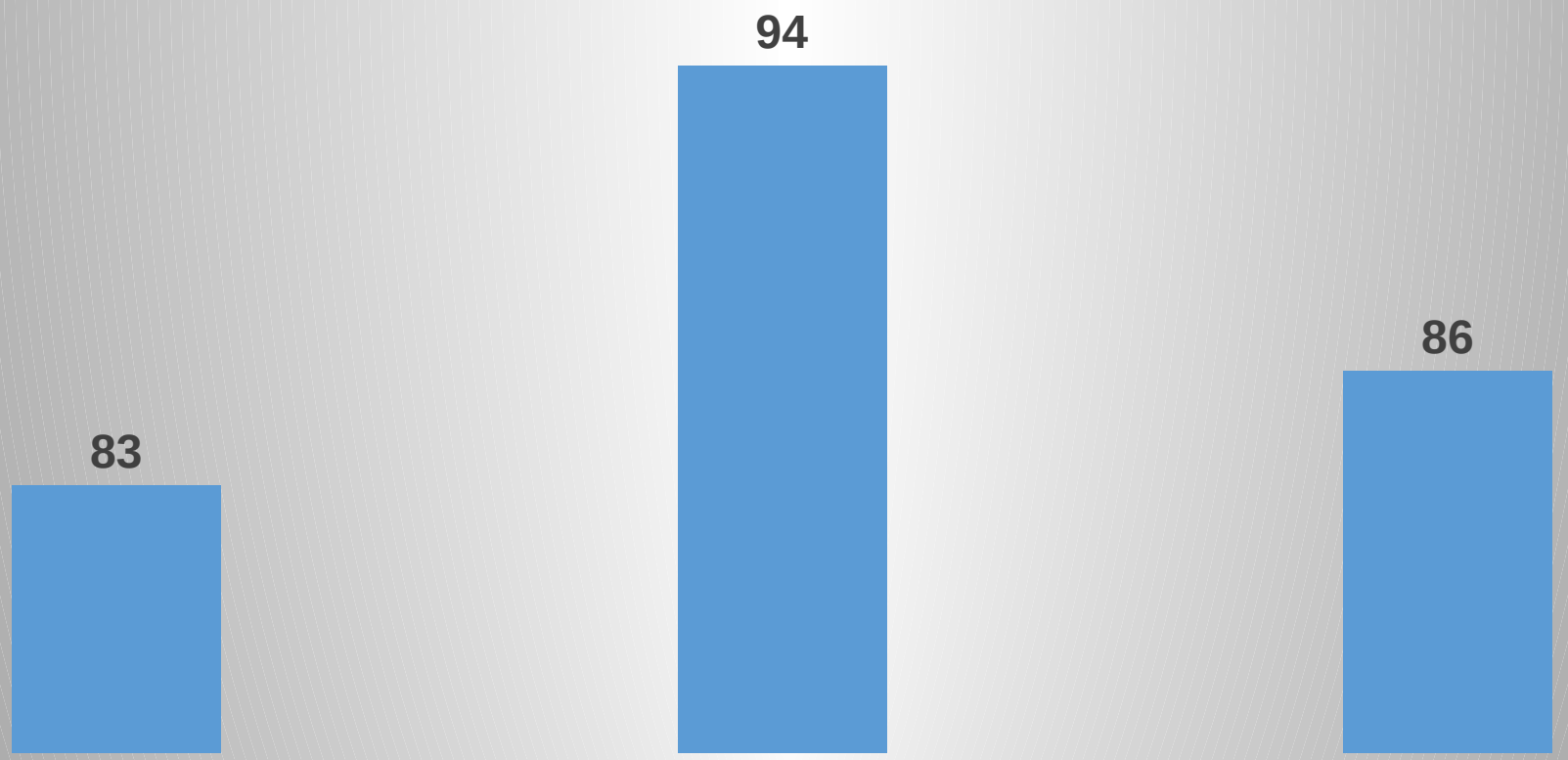
Pelletier SJ et al. Liver Transpl 2005; 11: 435.

The advent of DAAs: what does it change in liver transplantation?

- Treat patients with mild disease or compensated cirrhosis to avoid progression to cirrhosis or decompensation
- Treat patients with advanced fibrosis or cirrhosis to prevent HCC
- Save organs for non-HCV infected candidates
- Treat patients with decompensated cirrhosis on the waiting list in the hope of a return to compensated cirrhosis
- Treat patients on the waiting list to avoid post-transplant recurrence
- Treat patients wit post transplant recurrence

DAAs in the treatment of patients with cirrhosis

267patients with decompensated cirrhosis (Child B)
Genotype 1: 78%



Curry MP et al. N Engl J Med 2015; 373: 27

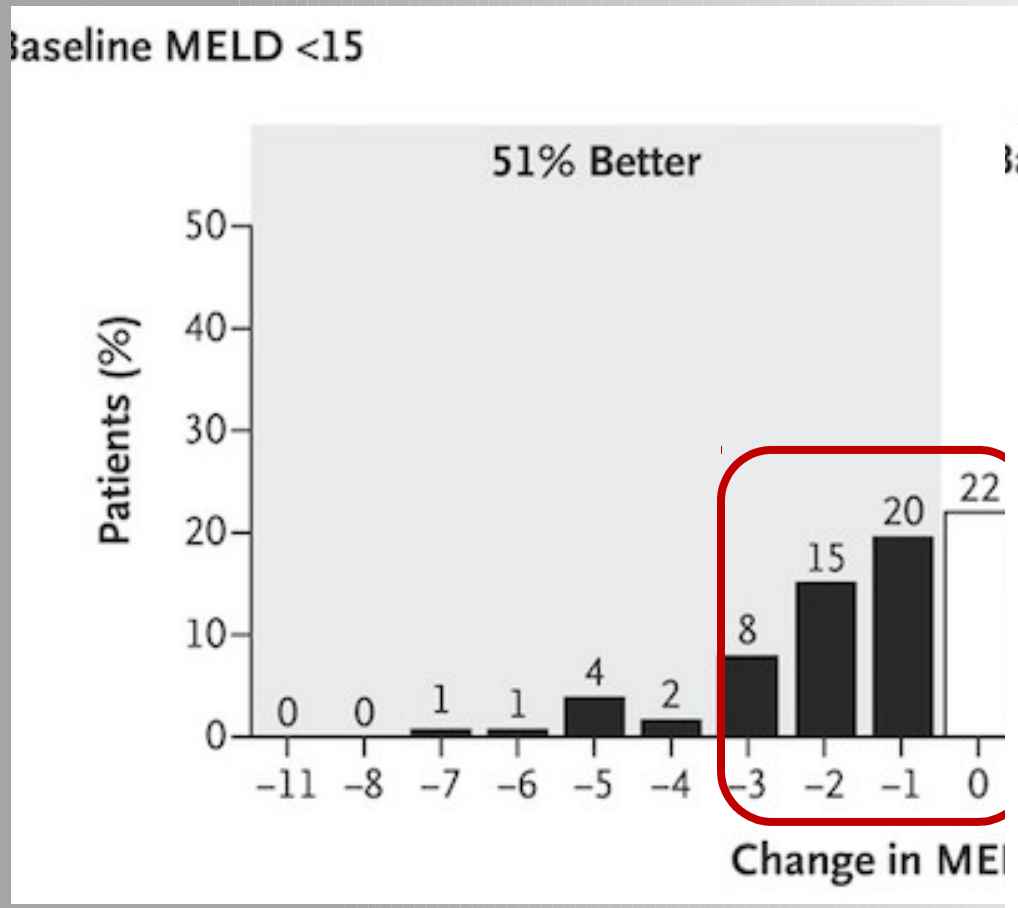
Impact of SVR on the outcome in advanced HCV

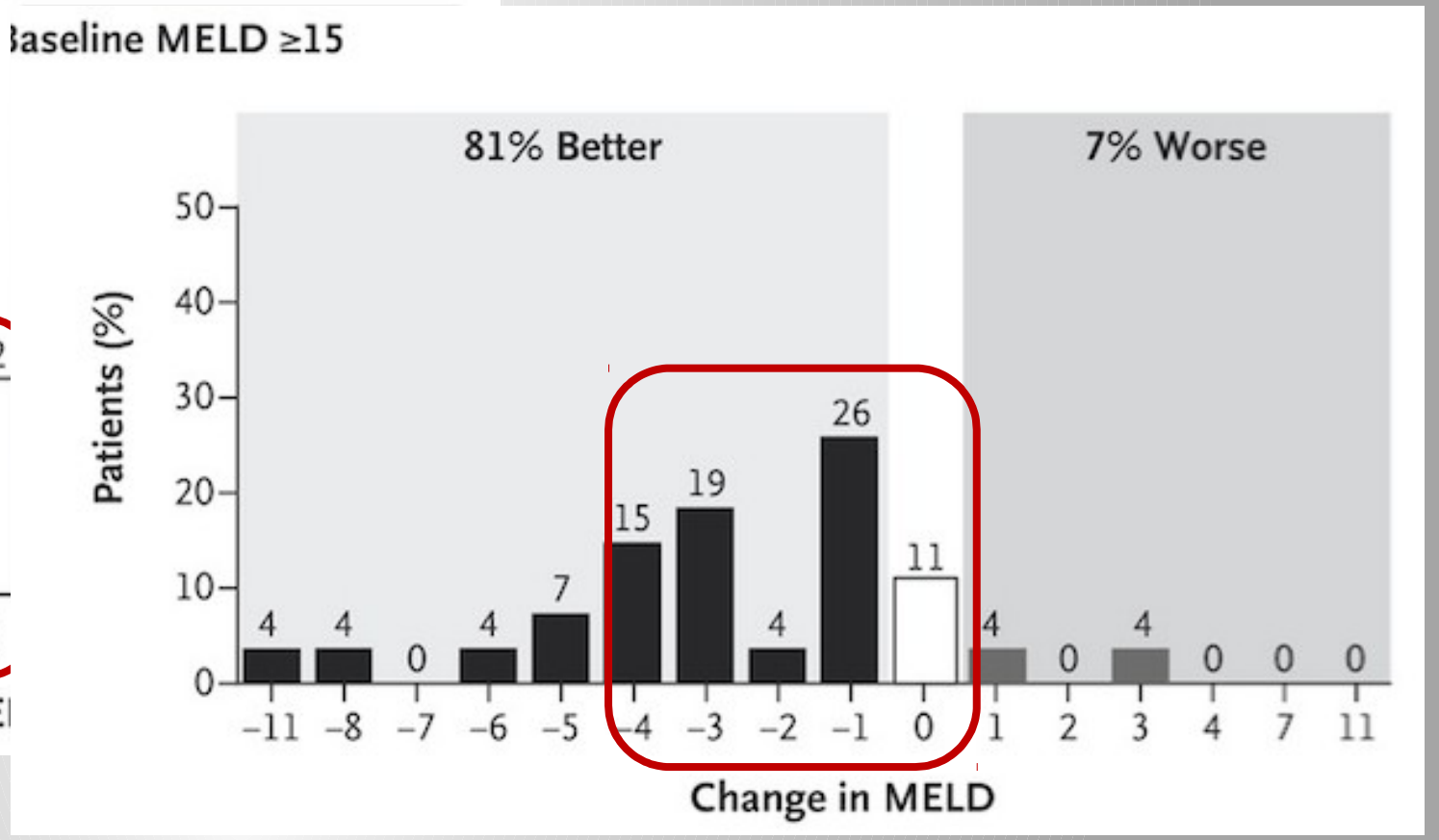
449 HCV-infected patients with fibrosis (Ishak) ≥ 3

	SVR	No SVR
Patients	140	309
Decompensation	1.4%	13.9%
HCC	1.4%	9.1%
Liver related death	0.7%	6.8%
Liver transplantation	0.7%	11%
Liver related death or transplantation	1.4%	15.9%

Morgan TR et al. Hepatology 2010; 52: 833.

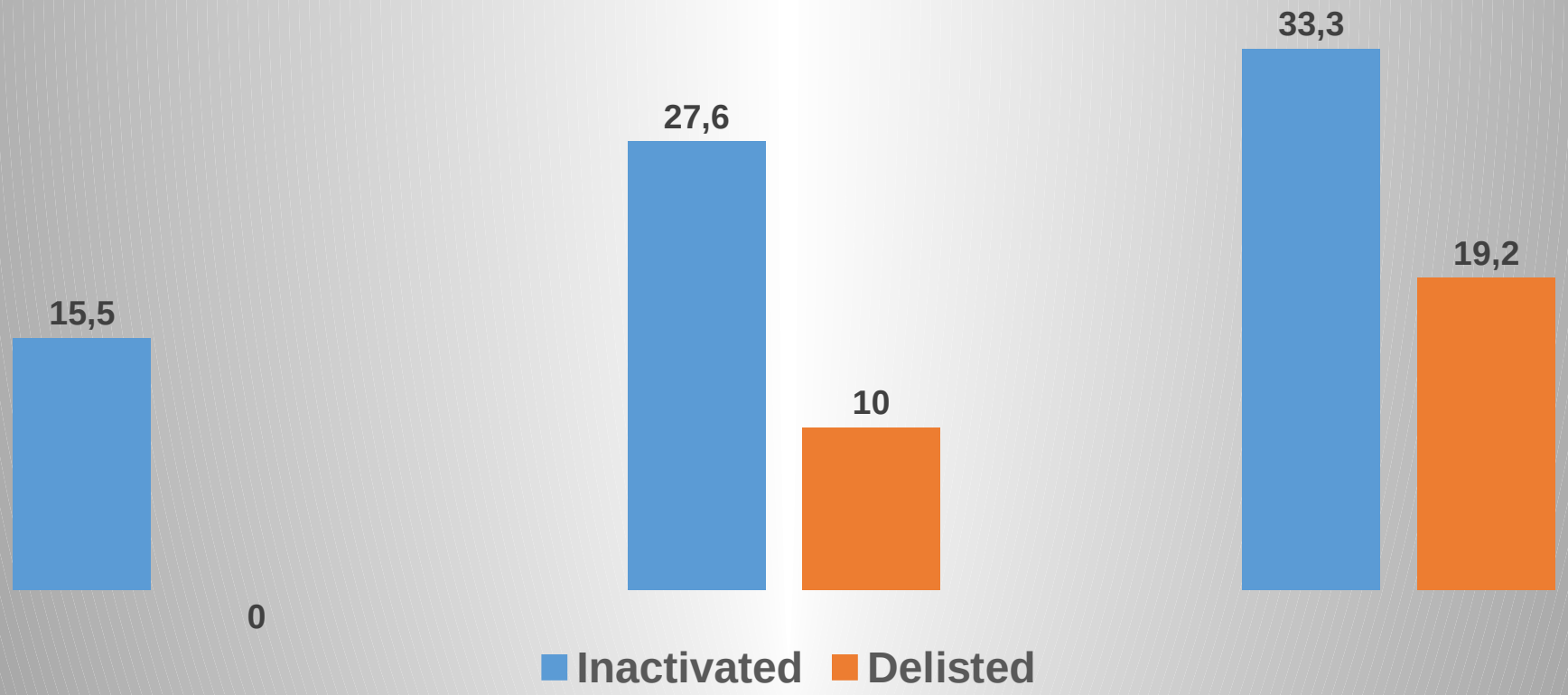
Impact of SVR on disease severity in decompensated cirrhosis





Curry MP et al. Hepatology 2015; 373: 2618.

Impact of SVR on delisting/inactivation



Belli LS et al. J Hepatol 2016; 65: 524.

Impact of SVR on delisting/inactivation

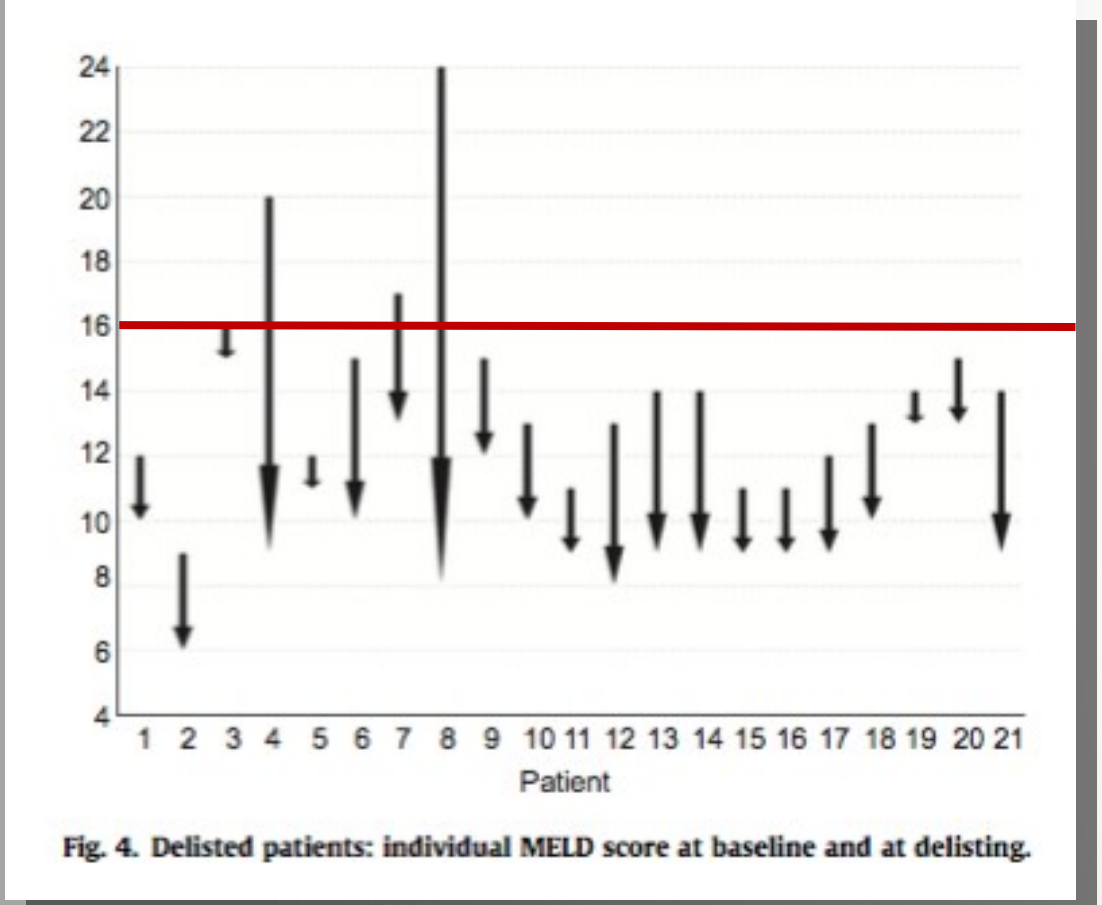
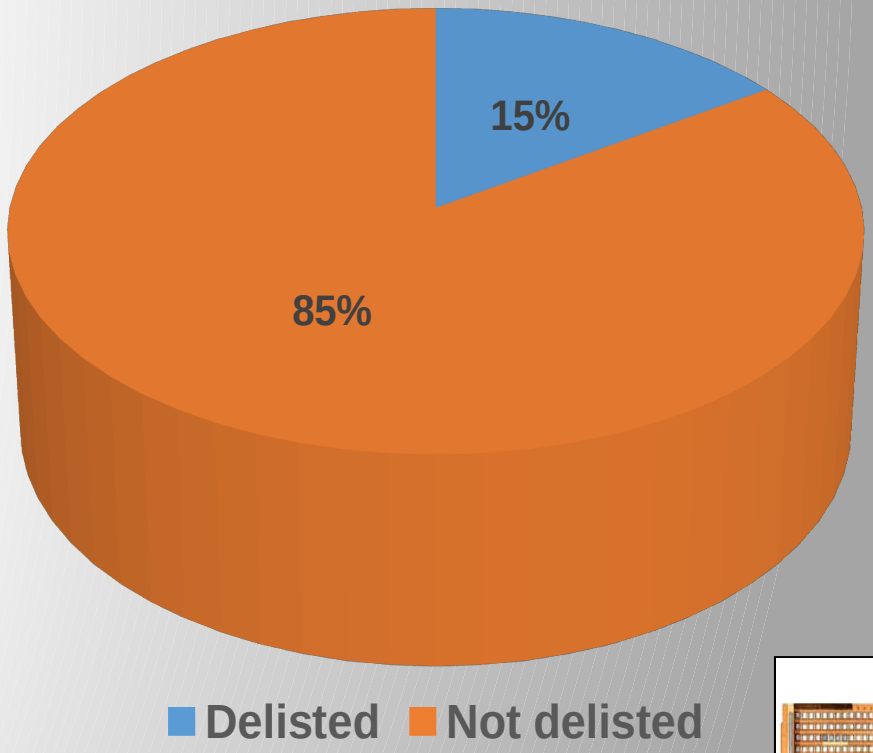


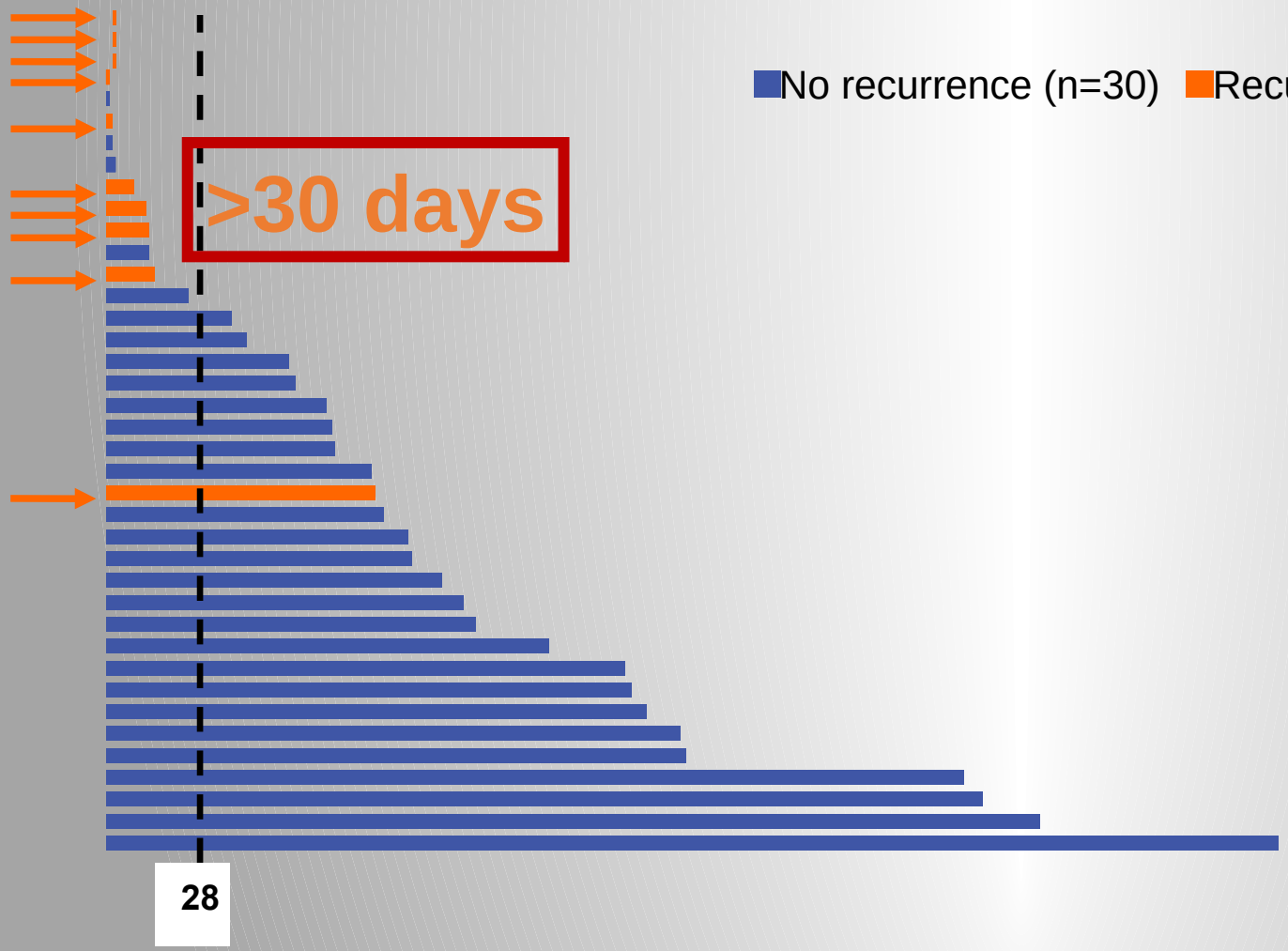
Fig. 4. Delisted patients: individual MELD score at baseline and at delisting.

Delisting after SVR in patients with a MELD score > 20



Belli LS et al. J Hepatol 2016; 65: 524.

Pre-transplant DAAs to prevent recurrence



HCV-RNA not detected (time)

- **No recurrence: 90 days**
- **Recurrence : 5.5 days**

  p <0.001

Curry MP, *et al*. APASL 2014.

DAAs in the treatment of post-transplant recurrent hepatitis C

Author	Year	Patients	Combination	Duration	SVR (%)
Forns X	2015	104	Sof + Riba	24-48 w	59
Guttierez JA	2015	61	Sof + Sime	12 w	93
Pungpasong S	2015	123	Sof + Sime	12 w	90
Coilly A	2016	137	Sof + Dacla ± Riba	12-24 w	96

No longer re-transplantations for recurrent HCV

Durand F et al. Liver International 2017; 37: 130.

Effect of DAAs on HCC recurrence

Recurrence in patients with prior HCC treated with DAAs

Author	Year	Patients	DAAs	Follow-up (mo)	HCC recurrence
Reig M	2016	58	yes	5.7	28%
Conti F	2016	59	yes	6	28%
ANRS (Pol S)	2016	189	yes	20	14%*

* No significant difference with patients not receiving DAAs

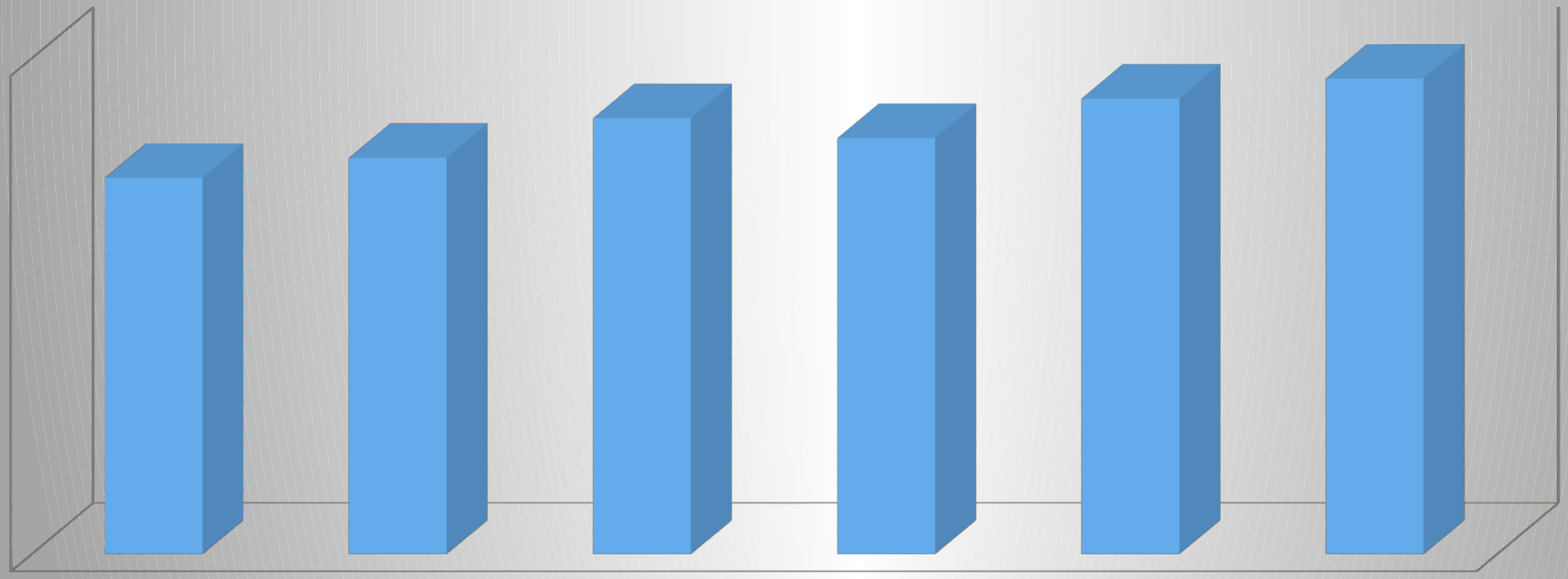
Do DAAs increase the risk of HCC recurrence after resection/ablation/chemoembolization?

The future of transplantation with DAAs

- Less transplantations for decompensated HCV-cirrhosis
  - But previously unknown HCV infected patients with decompensated cirrhosis may not always return to compensated cirrhosis after viral eradication
- Less transplantations for HCV cirrhosis with HCC
  - Higher rate of recurrence after the use of DAAs: a matter of debate
- Effective prevention of post transplant recurrence + effective treatment of recurrence
  - Virtually no longer indication for retransplantation
- Will the volume of liver transplantation be affected
  - No

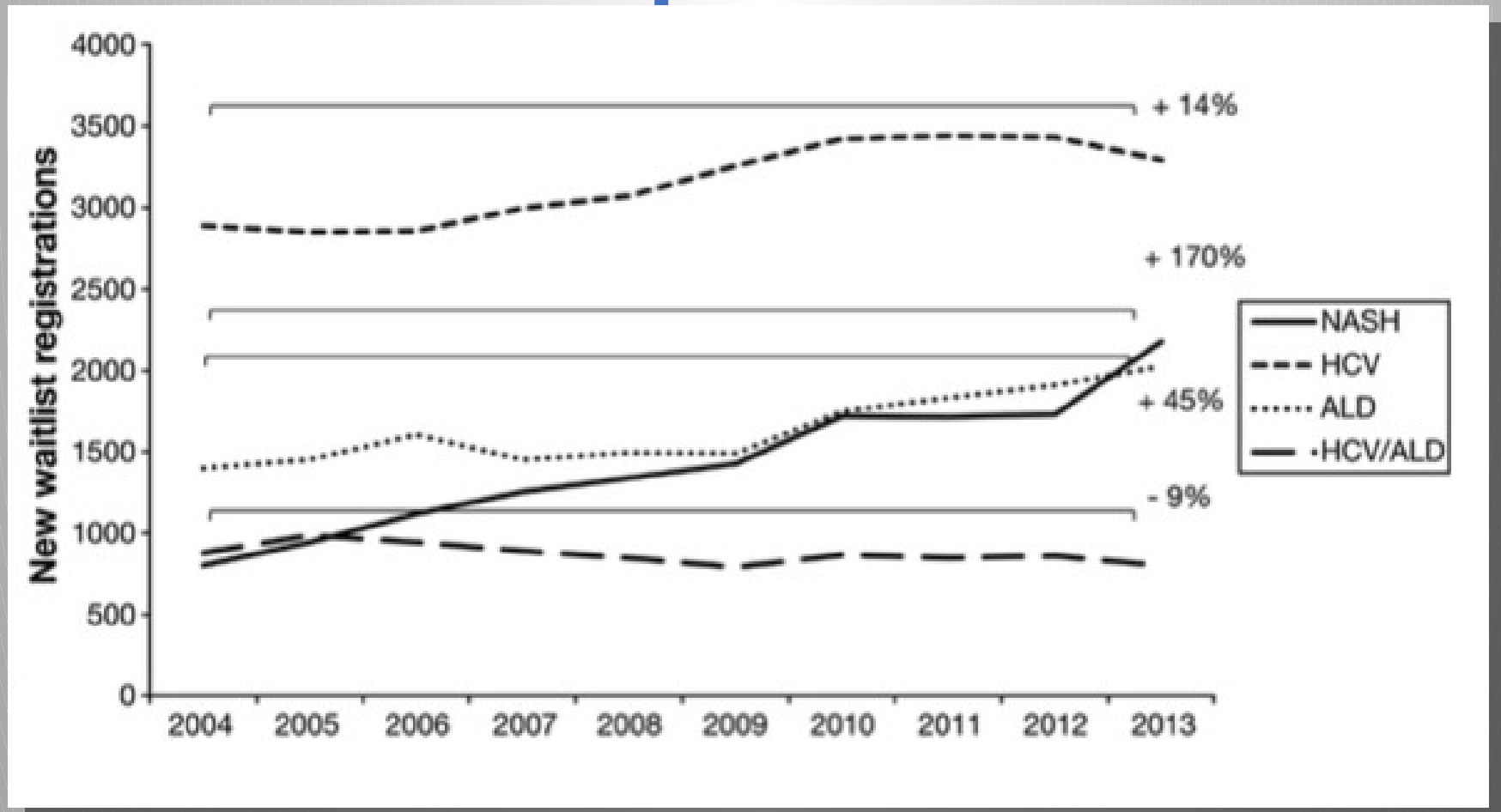
Imbalance between donors and recipients

Total candidates / donor



- **HCV-related cirrhosis/HCC : 25-40% of all indications for transplantation in the past**
- **Imbalance between donors and candidates: 140%**

Emerging indications for transplantation

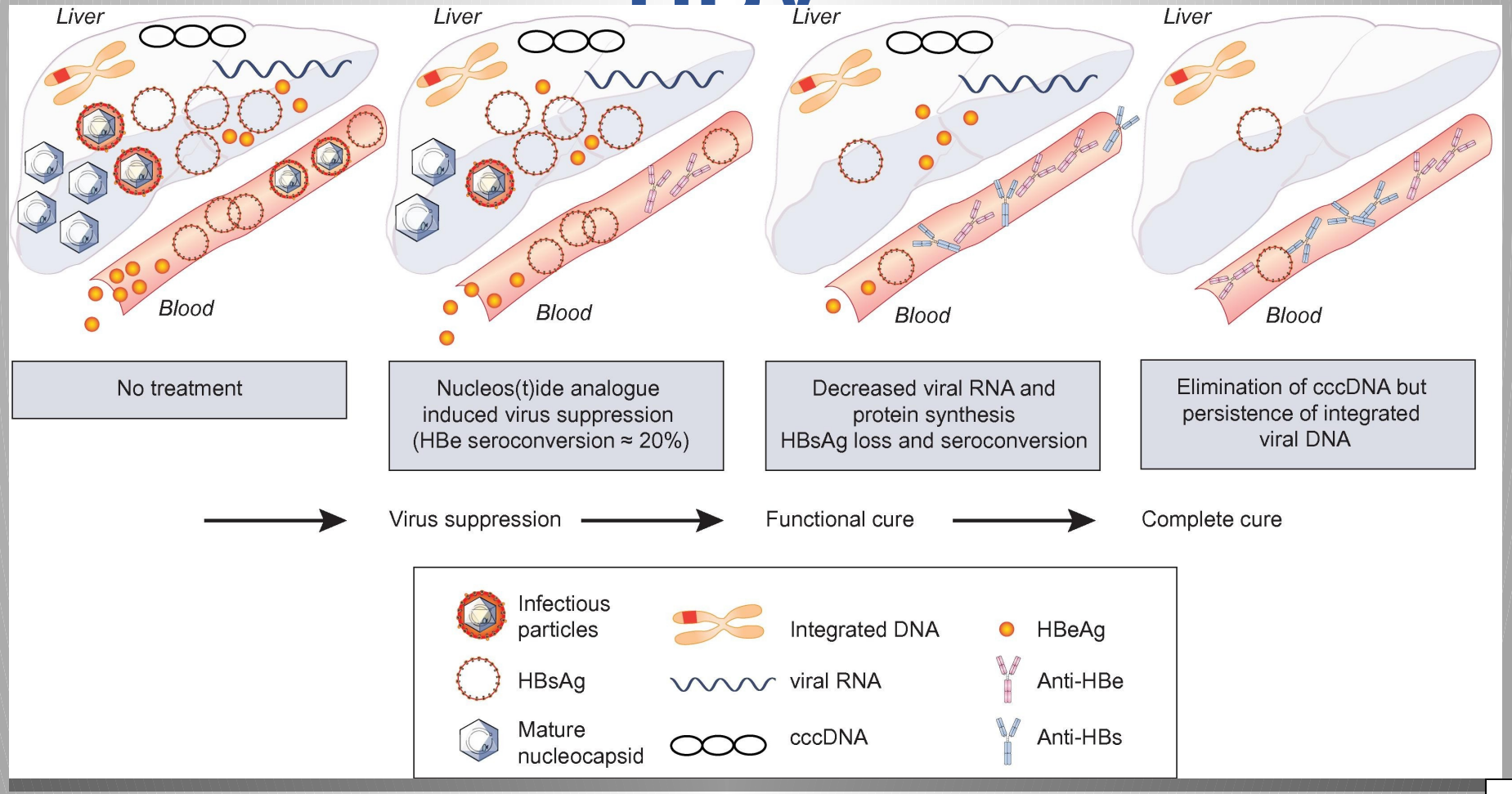


Wong RJ Gastroenterology 2015; 148: 547.

The future of liver transplantation for HBV

- **The burden of HBV and HCC will persist**
  - **Even in patients without cirrhosis**
  - **Screening by imaging !**
- **Decompensation of HBV cirrhosis: an uncommon indication**
- **NUCs plus HBIg very effective at preventing HBV recurrence**
  - **Need for lifelong prophylaxis**
- **Entecavir or tenofovir without HBIg is a safe option**
  - **Except in patients with HDV cirrhosis**
    - **Return to HBs Ag positivity can result in HDV recurrence**

The future of liver transplantation for HBV



Should include extrahepatic sites

Durantel D. J Hepatol 2016; 64: S117.