

Outcomes after successful direct-acting antiviral therapy for patients with chronic hepatitis C and decompensated cirrhosis

Cheung, Michelle C M; Walker, Alex J; Hudson, Benjamin E; Verma, Suman; McLauchlan, John; Mutimer, David J; Brown, Ashley; Gelson, William T H; MacDonald, Douglas C; Agarwal, Kosh; Foster, Graham R; Irving, William L; HCV Research UK

DOI:

[10.1016/j.jhep.2016.06.019](https://doi.org/10.1016/j.jhep.2016.06.019)

License:

Creative Commons: Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)

Document Version

Peer reviewed version

Citation for published version (Harvard):

Cheung, MCM, Walker, AJ, Hudson, BE, Verma, S, McLauchlan, J, Mutimer, DJ, Brown, A, Gelson, WTH, MacDonald, DC, Agarwal, K, Foster, GR, Irving, WL & HCV Research UK 2016, 'Outcomes after successful direct-acting antiviral therapy for patients with chronic hepatitis C and decompensated cirrhosis', *Journal of Hepatology*, vol. 65, no. 4, pp. 741–747. <https://doi.org/10.1016/j.jhep.2016.06.019>

[Link to publication on Research at Birmingham portal](#)

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

**Outcomes a year after successful direct acting antiviral therapy for patients with
chronic hepatitis C and decompensated cirrhosis**

Michelle CM Cheung

Alex J Walker

Benjamin E Hudson

Suman Verma

John McLauchlan

David J Mutimer

Ashley Brown

William TH Gelson

Douglas C MacDonald

Kosh Agarwal

Graham R Foster

William L Irving

HCV Research UK

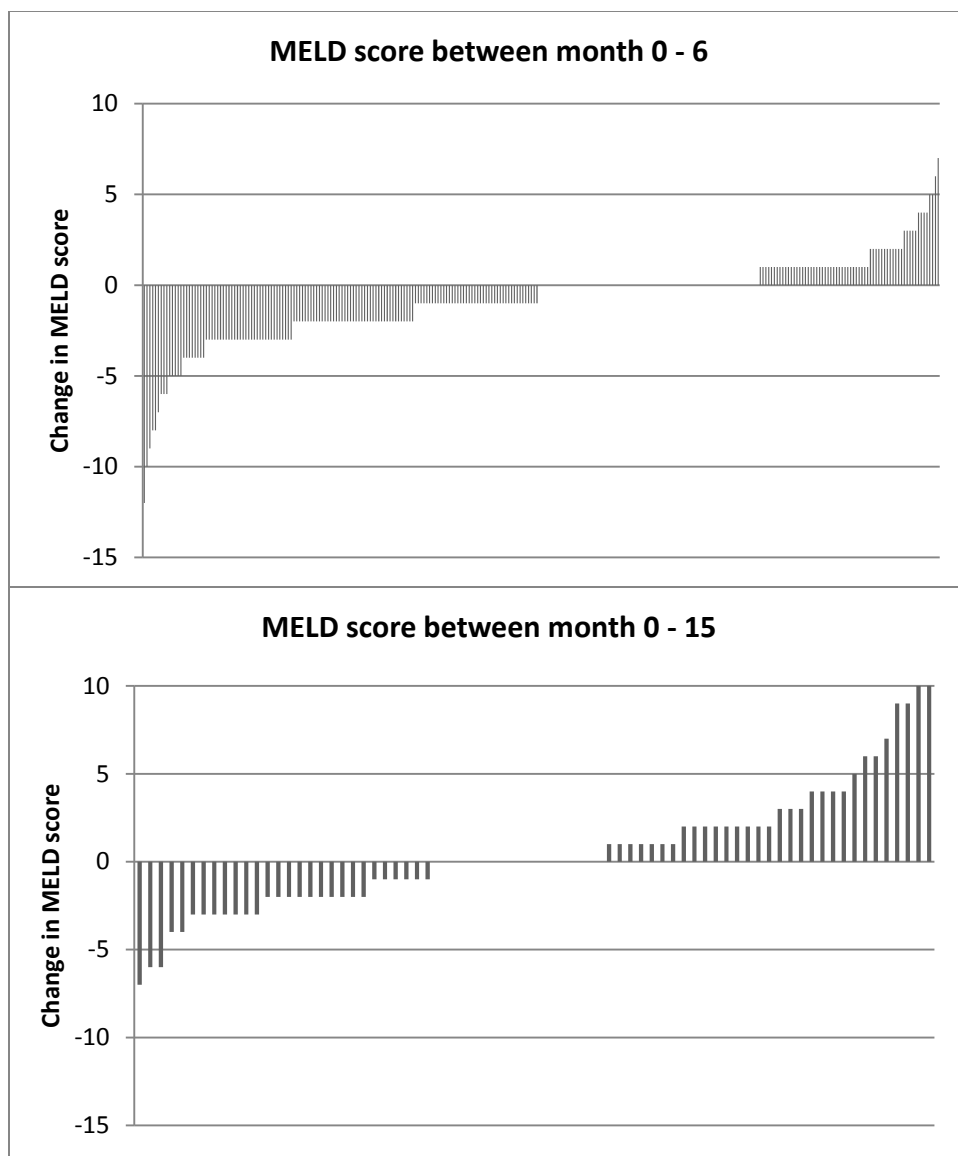
Contents

	Page numbers
List of HCVRUK Investigators	3-4
Supplementary figure 1	5
Supplementary tables 1 to 5	6-10

HCV Research UK Investigators

Abouda G (Hull Royal Infirmary), Agarwal K (Kings College Hospital, London), Ala A (Frimley Park Hospital), Aldersley M (St James's University Hospital, Leeds), Alexander G (Addenbrookes Hospital, Cambridge), Aspinall R (Queen Alexandra Hospital, Portsmouth), Barclay S (Glasgow Royal Infirmary), Barnes E (John Radcliffe Hospital, Oxford), Brown A (St Mary's Hospital, London), Benselin J (University of Nottingham), Butterworth J (Royal Shrewsbury Hospital), Ch'ng C (Singleton Hospital, Swansea), Chadwick D (James Cook University Hospital, Middlesbrough), Corless L (Hull Royal Infirmary), Cramp M (Derriford Hospital, Plymouth), Datta S (Southern General Hospital & Glasgow Victoria Hospital), Dillon J (Ninewells Hospital, Dundee), Elsharkawy A (Queen Elizabeth Hospital, Birmingham), Forton D (St George's Hospital, London), Foster G (The London Hospital), Foxton M (Chelsea & Westminster Hospital), Fraser A (Aberdeen Royal Infirmary), Gelson W (Addenbrookes Hospital, Cambridge), Goldberg D (Health Protection Scotland), Gorard D (Wycombe Hospital), Gordon F (Bristol Royal Infirmary), Gore C (Hepatitis C Trust), Hayes P (Royal Infirmary of Edinburgh), Heydtmann M (Royal Alexandra Hospital, Glasgow), Higham A (Royal Lancaster Infirmary), Holtham E (University of Nottingham), Hubscher S (University of Birmingham), Hutchinson S (Glasgow Caledonian University), Irving W (University of Nottingham), Jenkins N (Birmingham Heartlands Hospital), Kelly D (Birmingham Children's Hospital), Knowles J (James Cook University Hospital, Middlesbrough), Langford A (British Liver Trust), Lawson A, (Royal Derby Hospital), Leen C (Western General Hospital, Edinburgh), McDonald S (University of Glasgow), McLauchlan J (University of Glasgow), McPherson S (Freeman Hospital, Newcastle), Mills P

(Gartnavel General Hospital, Glasgow), Moreea S (Bradford Teaching Hospitals Foundation Trust), Mutimer D (Queen Elizabeth Hospital, Birmingham), Neal K (Public Health England), Patel A (University of Glasgow), Prince M (Manchester Royal Infirmary), Quinlan P (University of Nottingham), Ramsay M (Public Health England), Reddy Y (Royal Blackburn Hospital), Richardson P (Royal Liverpool University Hospital), Rosenberg W (Royal Free Hospital & University College Hospital), Ryder S (Queen's Medical Centre, Nottingham), Shields P (Royal Preston Hospital), Shorrock C (Blackpool Victoria Hospital), Simmonds P (University of Edinburgh), Singhal S (Sandwell & City Hospitals, Birmingham), Sreedharan A (Lincoln County Hospital), Srirajaskanthan R (University Hospital Lewisham), Stone B (Royal Hallamshire Hospital, Sheffield), Thursz M (St Mary's Hospital, London), Tibble J (Brighton and Sussex University Hospitals NHS Trust), Ustianowski, A (North Manchester General Hospital), Verma S (Brighton and Sussex University Hospitals NHS Trust), Wilkes B (University of Nottingham), Wiselka M (Leicester Royal Infirmary), Wright M (Southampton General Hospital)



Supplementary Fig. 1. MELD score changes between baseline to month 6 and month 15. Top panel shows MELD change at month 6 (282 comparative scores available) and bottom panel shows MELD change at month 15 (74 comparative scores available – MELD at month 15 was calculated if laboratory results were available within a two month window of month 15). Patients transplanted at month 6 and 15 respectively were excluded.

Supplementary table 1. Virological outcome (intention to treat) by treatment regime and genotype

All		N	SVR24 (%)	Virological failure (%)	Died before SVR 24(%)	Not available / lost to follow up (%)
G1	Sof/LDV	13	76.9	7.7	15.4	0.0
	Sof/LDV/RBV	148	89.2	5.4	3.4	2.0
	Sof/DCV	3	66.7	33.3	0.0	0.0
	Sof/DCV/RBV	34	88.2	2.9	2.9	5.9
G3	Sof/LDV	5	40.0	60.0	0.0	0.0
	Sof/LDV/RBV	57	61.4	33.3	5.3	0.0
	Sof/DCV	5	40.0	0.0	60.0	0.0
	Sof/DCV/RBV	104	69.2	16.3	10.6	3.8
Other genotypes	Sof/LDV	0	0.0	0.0	0.0	0.0
	Sof/LDV/RBV	23	87.0	13.0	0.0	0.0
	Sof/DCV	3	100.0	0.0	0.0	0.0
	Sof/DCV/RBV	11	81.8	0.0	9.1	9.1

Supplementary table 2. Serious adverse events in treated patients. Events after month 6 were reported only for patients who achieved SVR24, since non-SVR24 patients received retreatment. Note each patient may be counted more than once if multiple events occurred.

	SVR24 (n=317)			Non-SVR24 (n=89)		
	Month 0-6	Month 6-15	Month 0-15	Month 0-6		
Decompensation	46 (14.5%)	16 (5.0%)	52(16.4%)	26 (29.2%)	-	-
Sepsis	21 (6.6%)	9 (2.8%)	26 (8.2%)	6 (6.7%)	-	-
All cause hospitalisations	94 (29.7%)	62 (19.6%)	116 (36.6%)	39 (43.8%)	-	-

Supplementary table 3. Outcomes within 6 months in patients after excluding active alcohol users at baseline. ** difference between treated and untreated p=0.025

	N	Deaths	Hepatocellular carcinoma	Liver transplants	Decompensation
Treated	353	12 (3.4%)	15 (4.2%)	27 (7.6%)	66 (18.7%) *
Untreated	201	9 (4.5%)	9 (4.5%)	10 (5.0%)	54 (26.9%) *
Untreated – subsequently received DAA	106	0 (0.0%)	4 (3.8%)	3 (2.8%)	26 (24.5%)

Supplementary table 4. MELD score change at month 6 and 15 according to baseline MELD, for patients with SVR24 who did not receive a transplant during this period.

Baseline MELD	N	Average MELD – baseline	Average MELD change – month 6 (range)	Average MELD – month 6	Average MELD change – month 15	Average MELD – month 15
<= 9	87	8.3	+1.8 (-2 to 5)	8.0	+0.74 (-2 to 4)	8.5
10-14	166	11.8	- 0.77 (-6 to 7)	10.9	+0.71 (-6 to 10)	12.2
>15	45	17	-2.7 (-12 to 4)	14.7	- 1.4 (-7 to 10)	15.0

Supplementary table 5. MELD score change at month 15 according to baseline MELD, for patients with SVR24 who did not receive a transplant during this period.

	Month 15 (n, %)		
Baseline	</=9	10-14	>15
</=9 (n=26)	19 (73.1%)	7 (26.9%)	0 (0%)
10-14 (n=41)	10 (24.4%)	20 (48.8%)	11 (26.8%)
>15 (n=7)	1 (14.3%)	3 (42.9%)	3 (42.9%)