Associate Professor Ed Gane

New Zealand Liver Transplant Unit

Auckland

Saturday, June 10, 2017 (Room 2)

11:00 - 11:55 WS #118: Update on Hep C Management

12:05 - 13:00 WS #130: Update on Hep C Management (Repeated)

UPDATE OF HEPATITIS C MANAGEMENT

HOW TO TREAT HCV IN GENERAL PRACTICE?

ED GANE
NZLTU, ACH

Hepatitis C – who to test

1. Have you ever injected drugs?
2. Have you received blood transfusion prior to 1992?
3. Have you ever been in prison?
4. Have you ever had jaundice or abnormal liver fn?
5. Have you lived in or received healthcare in Middle East, SE Asia, Indian subcontinent, Eastern Europe?
6. Does your mother or household member have HCV?
7. Have you ever received a tattoo or body piercing using unsterile equipment?

Hepatitis C – how to test

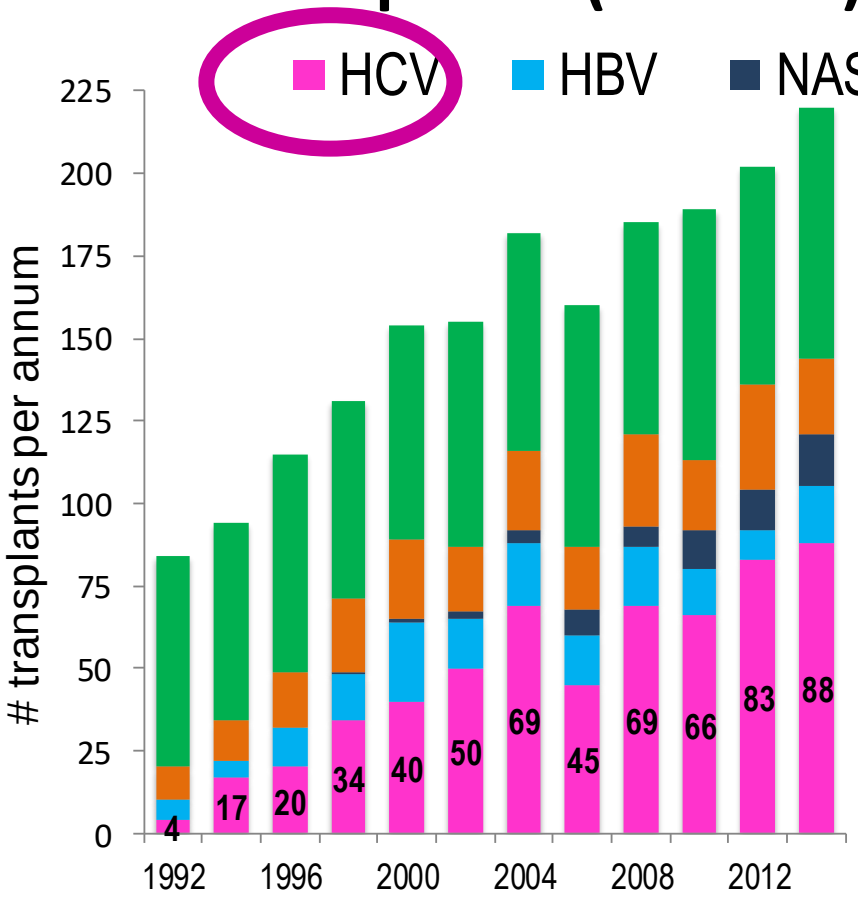
1. HCV Antibody test
   - Previous exposure to virus
   - Remains positive after virus cleared
2. HCV RNA
   - Indicates current infection
3. HCV Genotype
   - Determines eligibility for treatment with funded drugs.
   - Repeat if last genotype result >5 years ago

LabTests Reflex testing

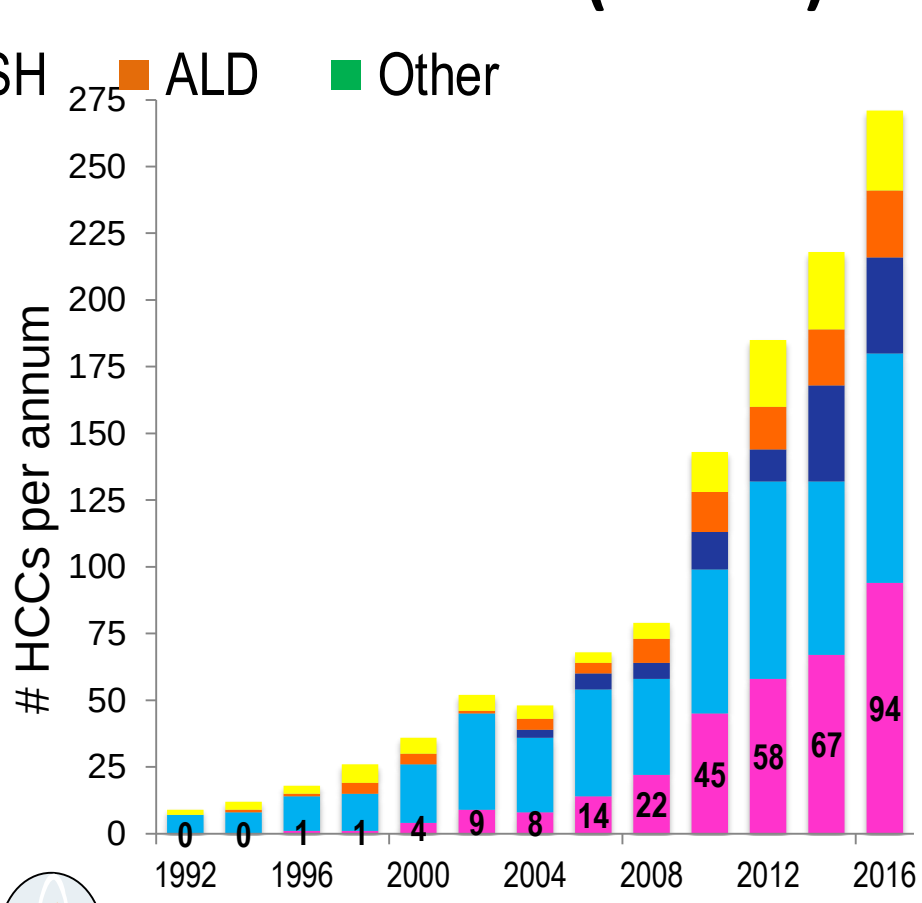
1. Request HCV Antibody
2. If positive ⇨HCV RNA
3. If positive ⇨ HCV genotyping

Hepatitis C – growing disease burden

Liver Transplants (ANZLTR)



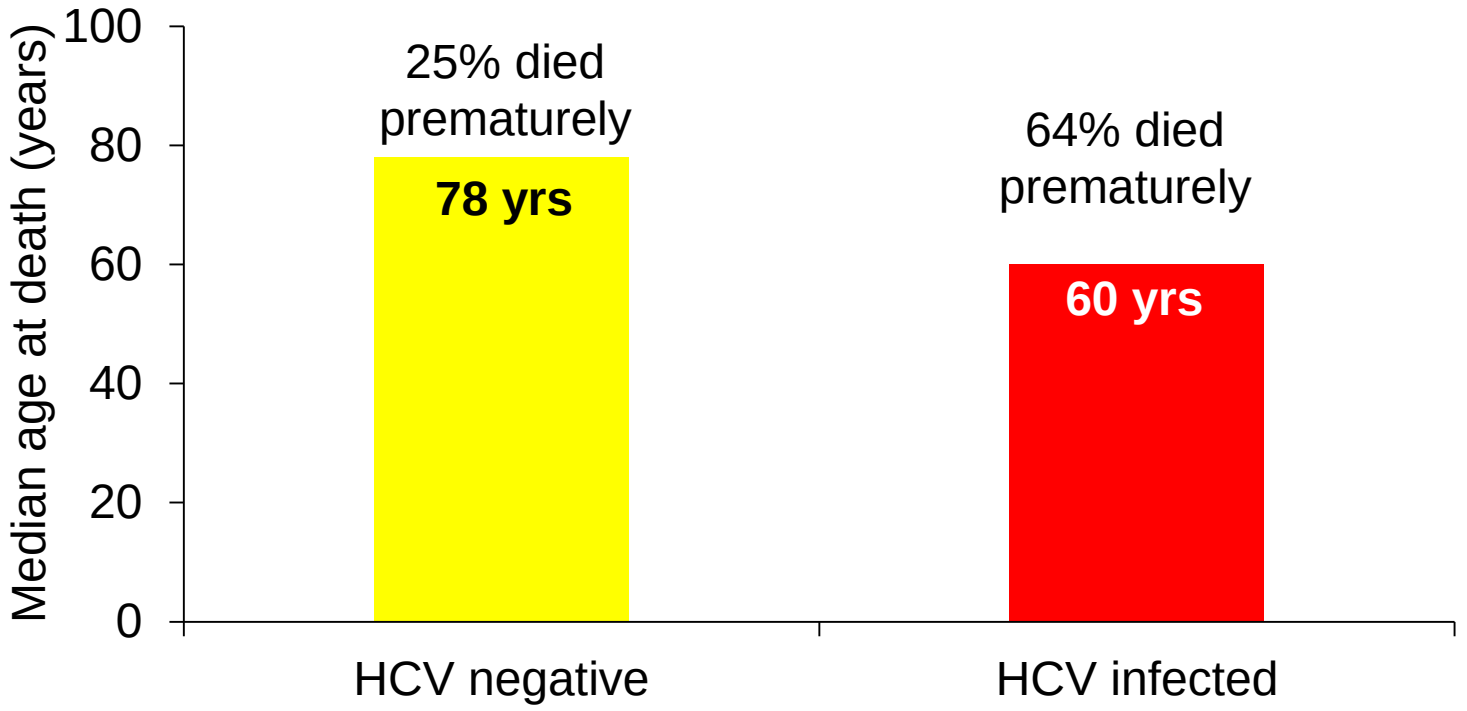
Liver Cancer (NZLTU)



26th Australian and New Zealand Liver Transplant Registry. http://www.slhd.nsw.gov.au/gastro/livertransplant/pdf/ANZLTR_26th_Report.pdf Accessed July 2015.

Chronic HCV infection reduces Life Expectancy

Premature death (<65 years) and median age at death among all deaths, NYC (2000–2011)



Pinchoff J, et al. Clin Infect Dis 2014;58:1047–54

Goals of Hepatitis C Therapy

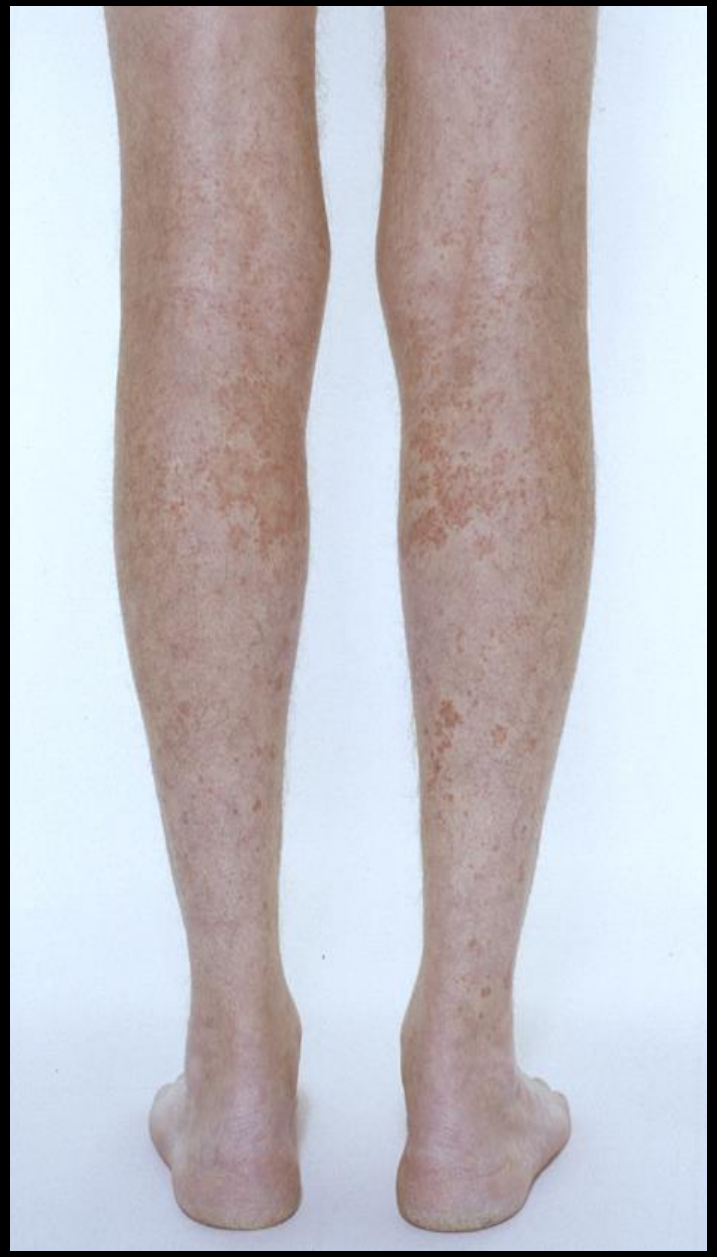
1. Eradicate HCV infection
2. Prevent liver-related complications
3. Prevent extraheptic complications
4. Reduce liver-related mortality
5. Reduce overall mortality
6. Improve quality of life

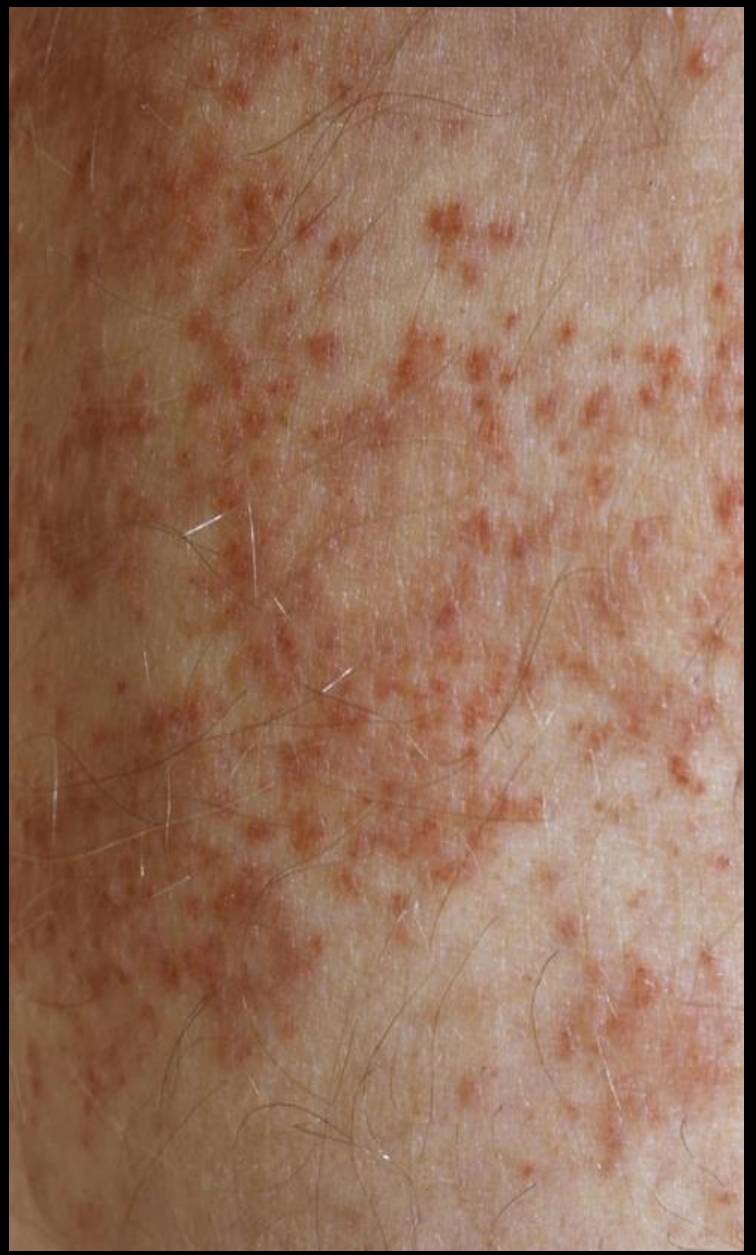
Treating Extrahepatic Manifestions of HCV

Case study #1

Julie

- 61 year old woman presents with red spots on legs, appeared after skiing holiday
  - Painful knees and hands
  - Lethargy++
- Drinks a couple of glasses of wine every night
- Major RTC aged 25 – in ICU for 1 month with multiple orthopaedic and chest operations
- O/E
  - petechial rash on lower legs
  - Joints appear normal with no effusion

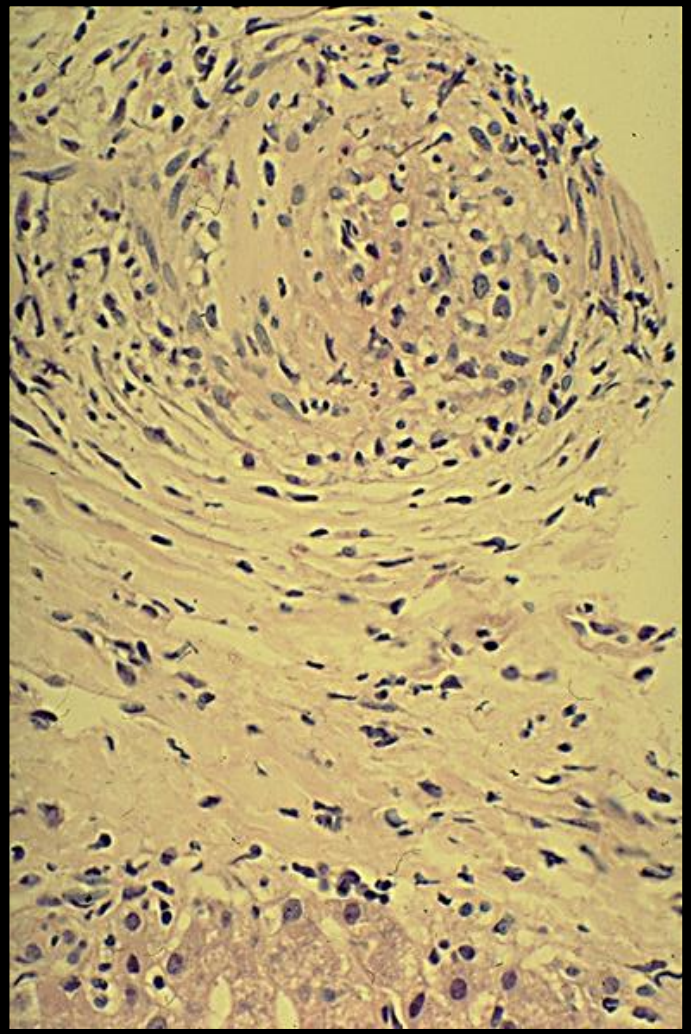


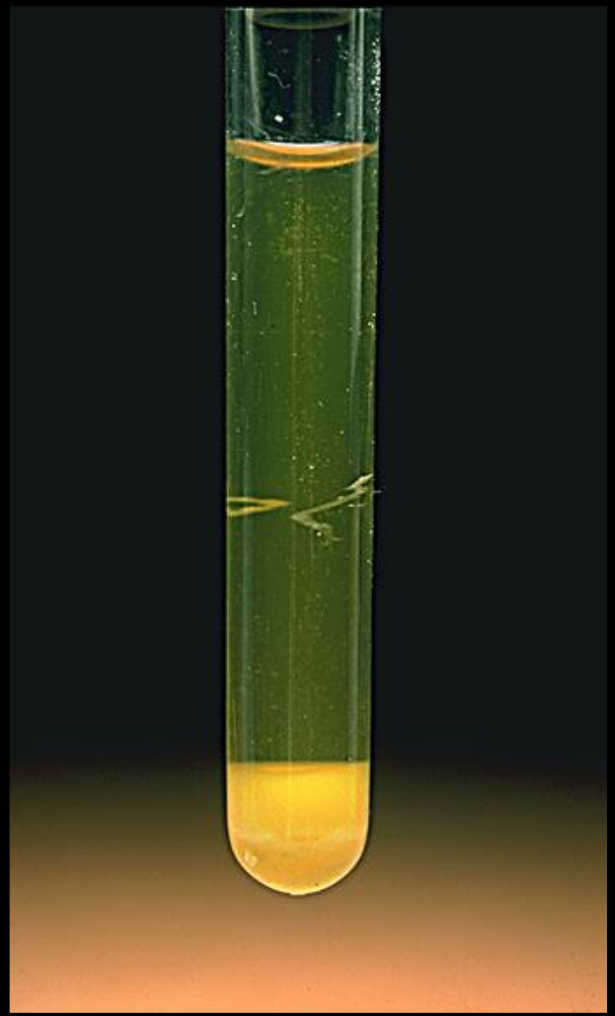


Case study #1

Julie

- Labs:
  - **ALT 155; ALP 150; GGT 225**
  - Hb 115; **Neutrophils 1.5; Platelets 65**
  - INR 1.0; albumin 36; bilirubin 10
  - **Rheumatoid factor 65 (high)**
  - **Complement level: C4 0.15 (low)**





Case study #1

Julie

- Labs continued
  - **Anti-HCV: pos**
  - **HCV RNA: pos**
  - **HCV genotype: 1b**

➡ e-referral for Fibroscan

  - **Liver stiffness 18 KPA = cirrhosis**

Case study #1

Julie

- Referred to ACH Hepatitis Clinic
  - Treated with VIEKIRA PAK 12 weeks (no RBV)
- Within 2 weeks:
  - ⇨Feels 100% better, Rash disappeared
- 12 weeks after treatment :
  - ⇨**CURED!!**

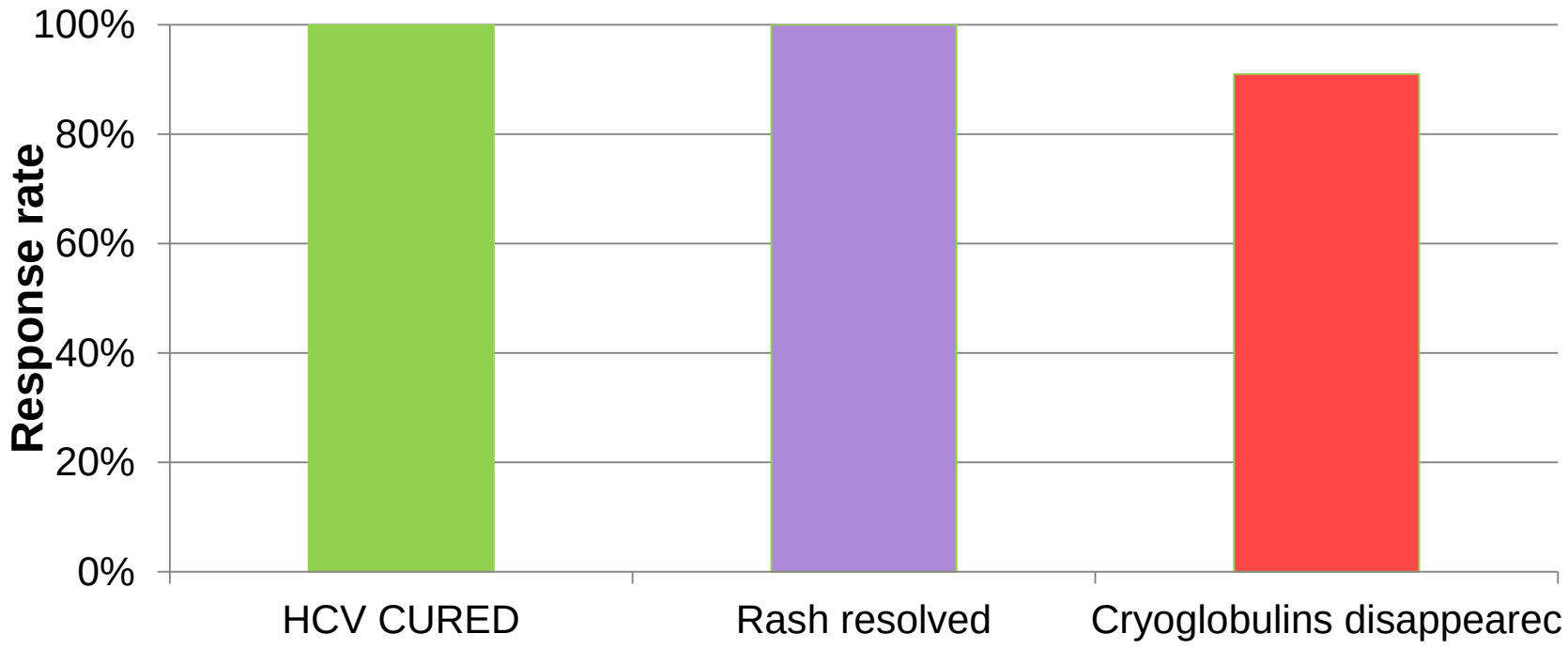
CIRRHOSIS⇨STAYS IN HOSPITAL CLINIC

- 6 monthly US surveillance for HCC
- Biennial endoscopic surveillance for varices

Essential Mixed Cryoglobulinaemia with Rash
Response to HCV eradication

- **Multicentre French collaboration 1992-2016**

IFN-free DAAs (n=115) [2]



[1] Saadourn Arthritis Rheumatology 2006
[2] Saadourn EASL 2017

Case study #2

Tom

- 36yr old man presents with lethargy low mood, struggling to working full time
- Drinks no alcohol, previously heavy
- Drummer in rock band in Sydney in 1980s
- Lead singer died in 2015 – liver cancer?

- O/E normal
- Labs:
  - **ALT 135;** ALP 65; GGT 45
  - Hb 127; Neutrophils 4.5; Platelets 255

Case study #2

Tom

- Labs continued
  - Anti-HCV: pos
  - HCV RNA: pos
  - HCV genotype: 1a
- Enquired about risk factors
  - Drummer in rock band in Sydney in 1980s
  - Lead singer died in 2015 – liver cancer?

➡ e-referral for Fibroscan at Hospital

- Liver stiffness 4 KPA –no fibrosis

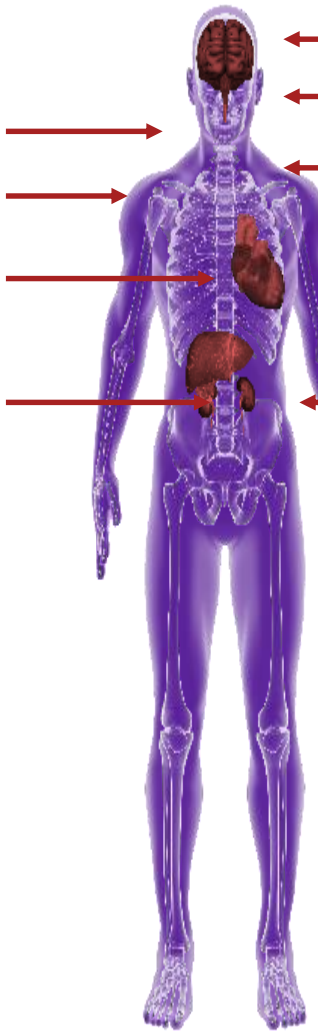
Case study #2

Tom

- Treated with VIEKIRA PAK-RBV 12 weeks
- Within 2 weeks:
  - More energy - feels like at 20 years old!
- After 12 weeks treatment and follow-up:
  - **CURED!!**

NO CIRRHOSIS⇨NO FOLLOW-UP NEEDED

Chronic HCV infection causes many health problems outside the liver



Fatigue, depression

Corneal ulcers (Mooren ulcers)

Thyroid disease

Lichen planus

Membranoproliferative glomerulonephritis

Arthralgias, myalgias, inflammatory polyarthritis

Mixed cryoglobulinaemia and cryoglobulinaemic vasculitis

Sjögren syndrome

Lymphoproliferative disorders

Pulmonary fibrosis

Type 2 diabetes

Porphyria cutanea tarda

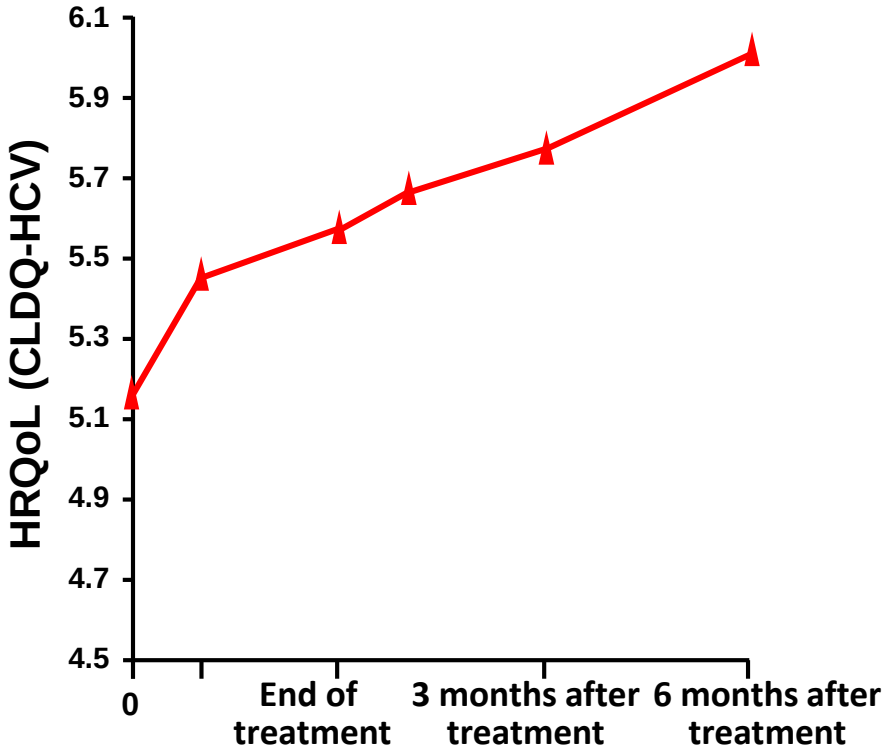
Systemic vasculitis (polyarteritis nodosa, microscopic polyangitis)

Autoimmune thrombocytopenia

Ali A, et al. Cleve Clin J Med 2005;72:1005–19; Cacoub P, et al. Dig Liver Dis 2014;46:S165–73; Jacobson I, et al. Clin Gastroenterol Hepatol 2010;8:1017–29

Curing HCV infection improves quality of life

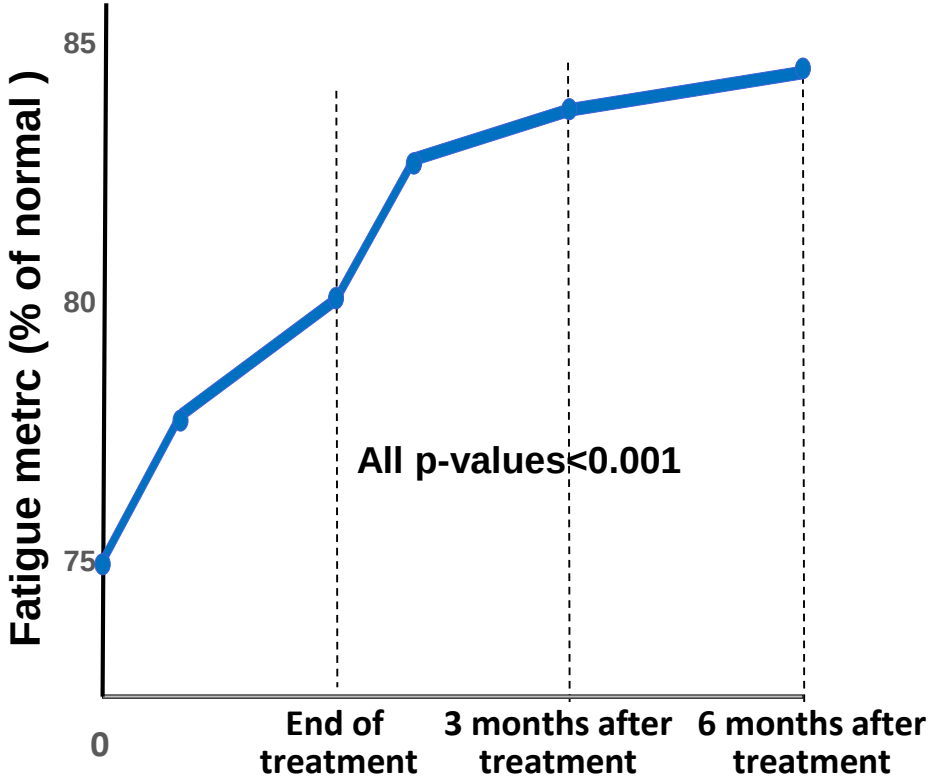
- **Quality of life in 1213 patients treated with SOF/VEL**



CLDQ-HCV: Chronic Liver Disease Questionnaire – Hepatitis C;

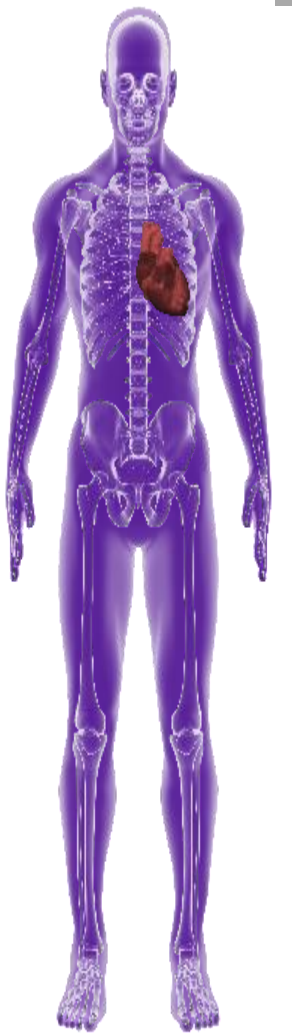
Younossi Z, et al. EASL 2016; Poster #FRI-200

- **Fatigue score in 1080 patients treated with LDV/SOF**



Z et al. Clinical Gastro and Hepatology 2015

Curing HCV infection reduces CVS mortality

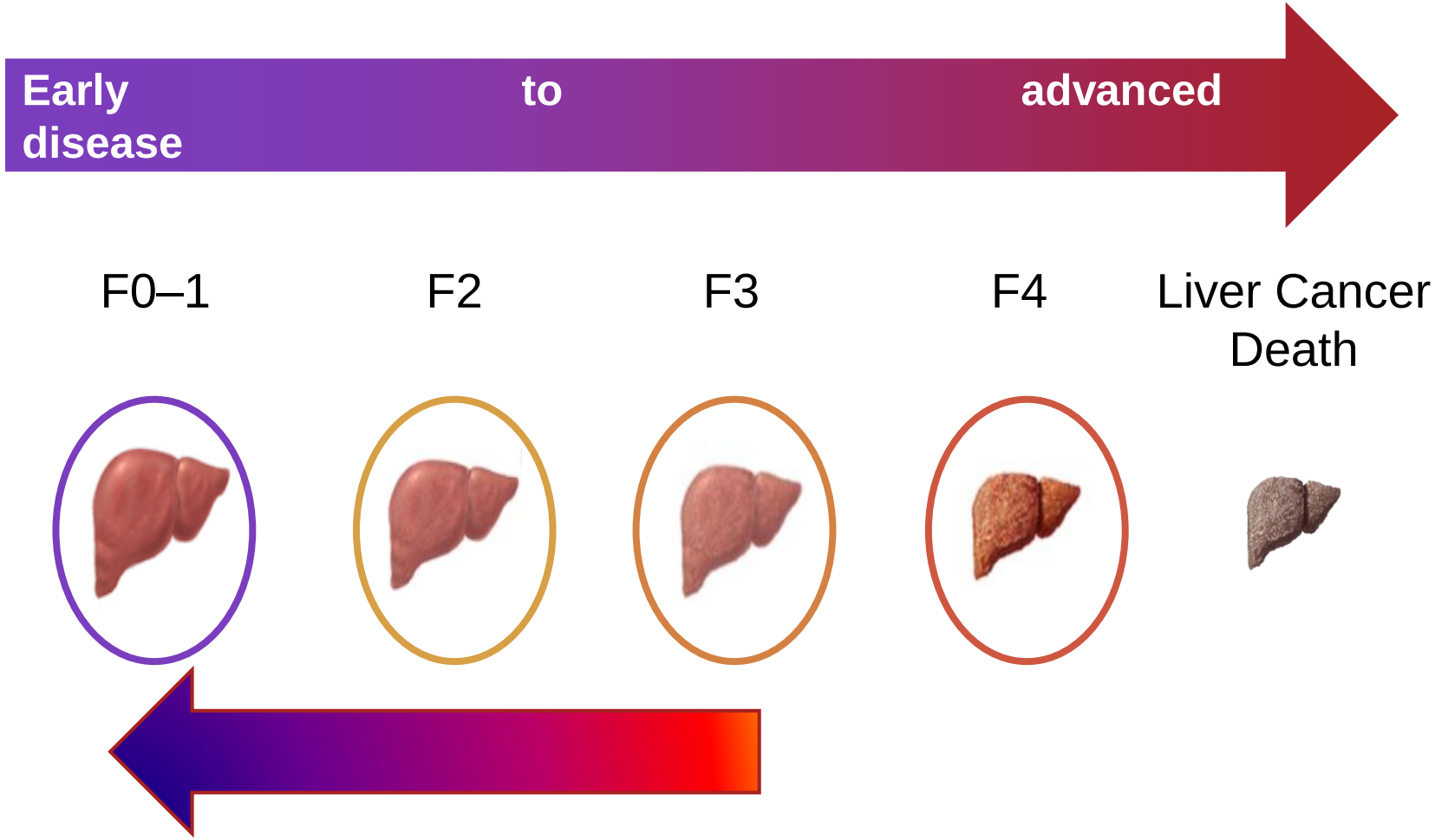


- 878 patients with HCV-cirrhosis treated
  - 306 cured ⇨ 4 (1%) had MI/PVD/CVA in
  - 571 not cured ⇨ 60 (11%) had MI/PVD/CVA

Features	HR	95% CI	p-value
Hypertension	3.24	1.78–5.91	<0.001
Smoker			<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		
Indian	9.20	2.46–24.95	0.003
SVR	**0.35**	**0.09–0.97**	**0.044**

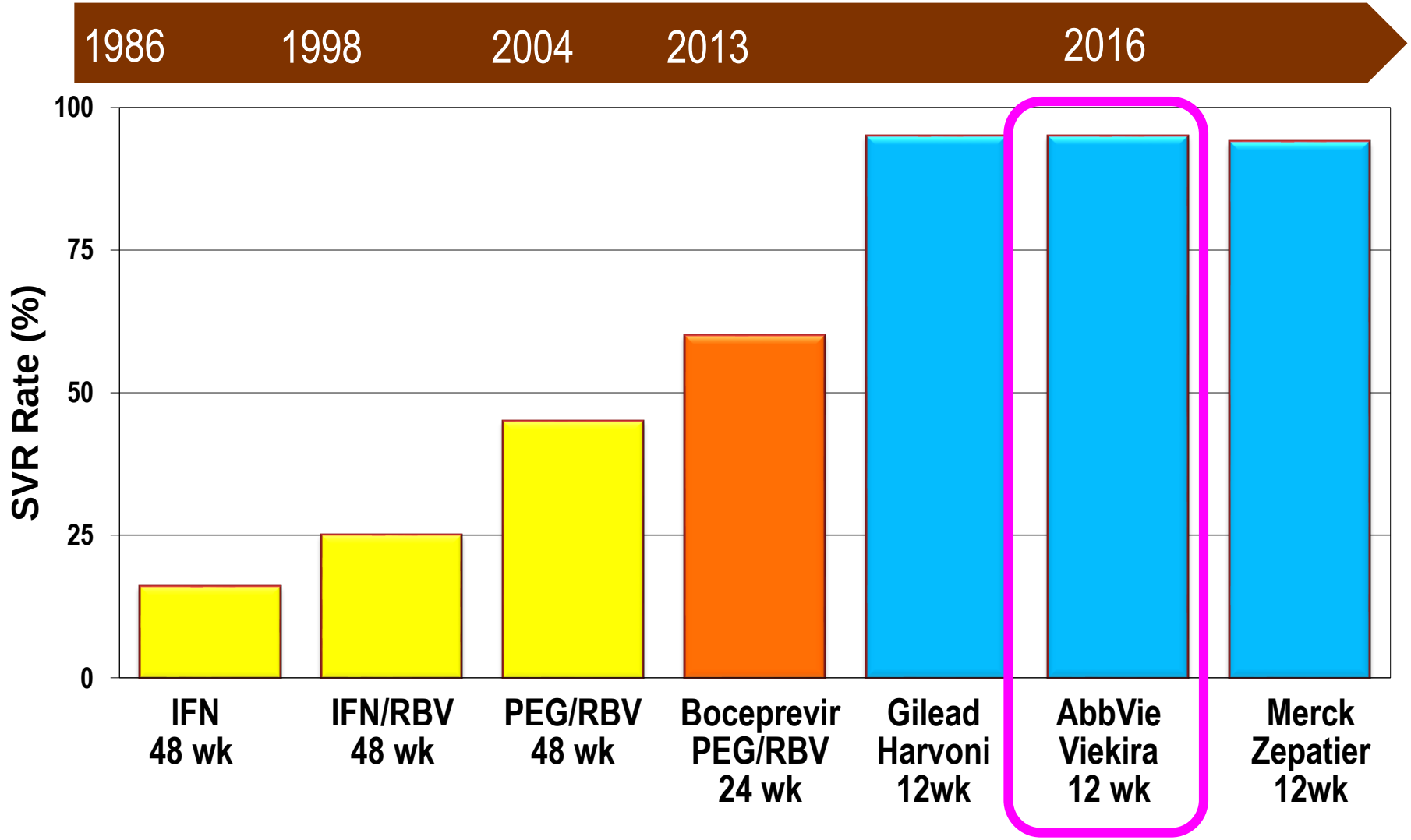
Cacoub P, et al. EASL 2017, Amsterdam. #PS-032

The excellent tolerability and efficacy of DAAs should allow everyone to be treated



Adapted from Hepatitis C online. Core concepts - natural history of hepatitis C infection: evaluation, staging, and monitoring of chronic hepatitis C. Available at: http://www.hepatitisc.uw.edu/go/evaluation-staging-monitoring/natural-history/core-concept/all (accessed April 2017);

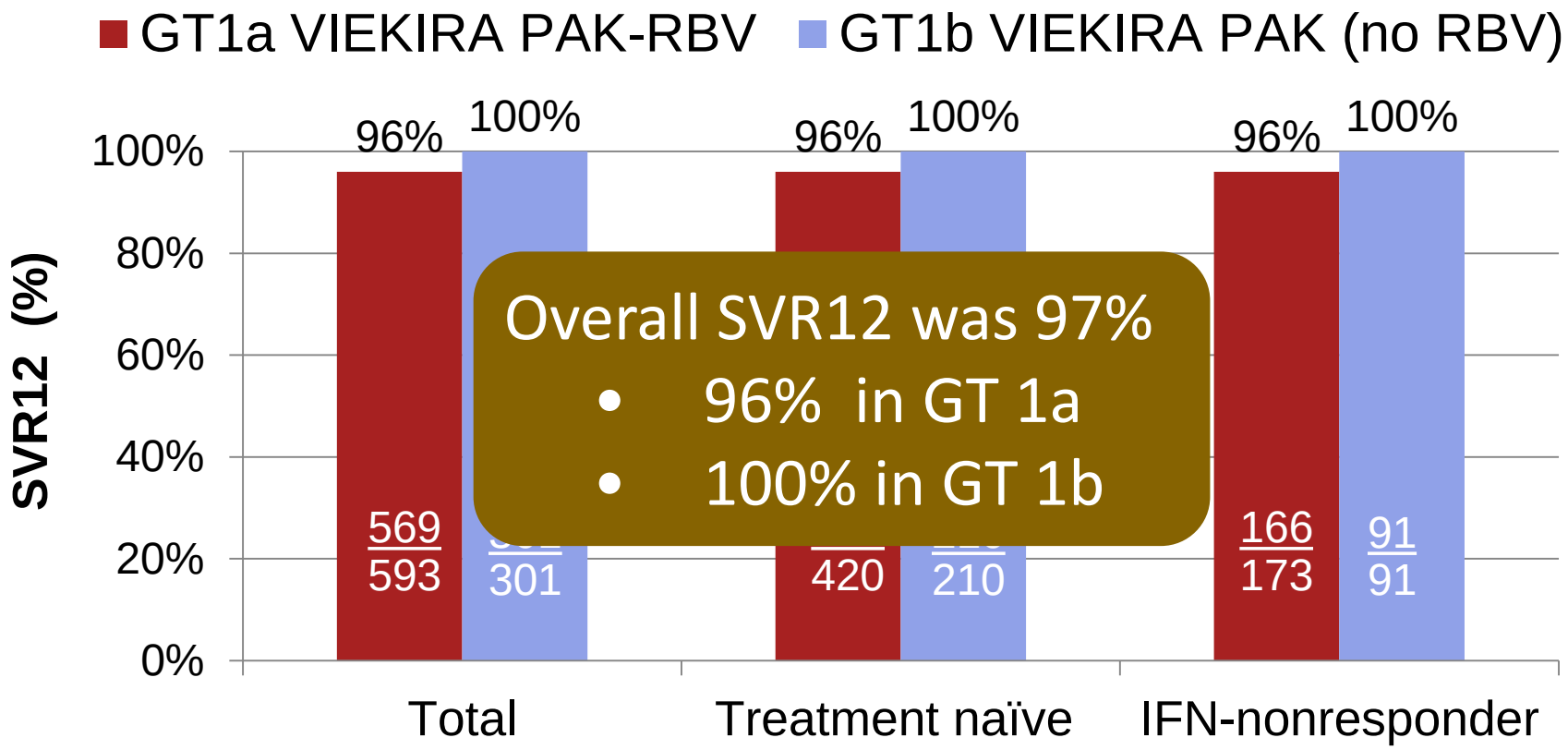
New Direct Acting Antivirals are better tolerated and more effective than Interferons



How do you use VIEKIRA PAK in General Practice?

VIEKIRA PAK Phase III: Efficacy in HCV GT 1 without cirrhosis

12 weeks VIEKIRA PAK ± RBV in treatment-naïve and IFN-failures

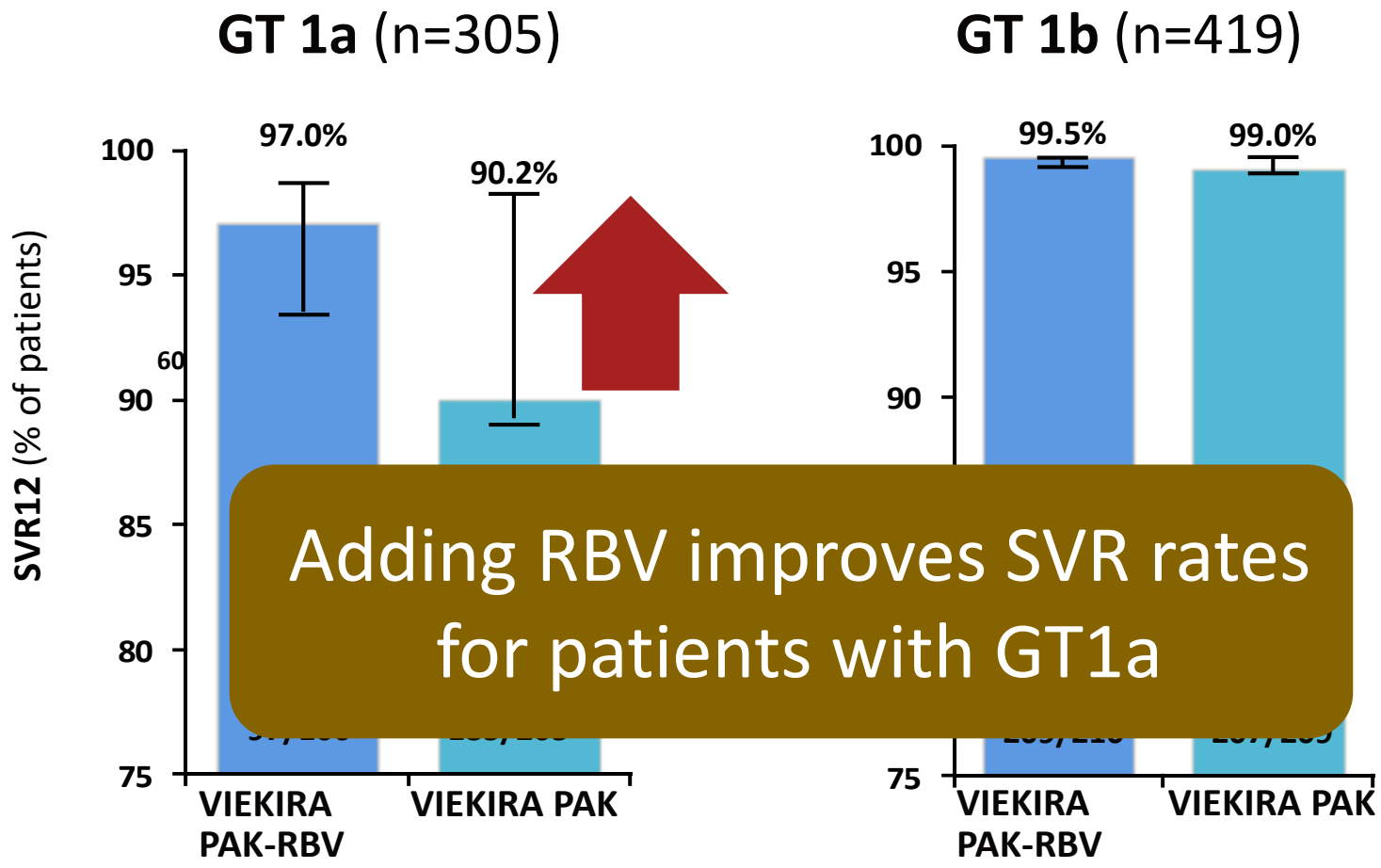


Feld J, et al. *N Engl J Med* 2014;370:1594-603.

Zeuzem S, et al. *N Engl J Med* 2014;370:1604-14.

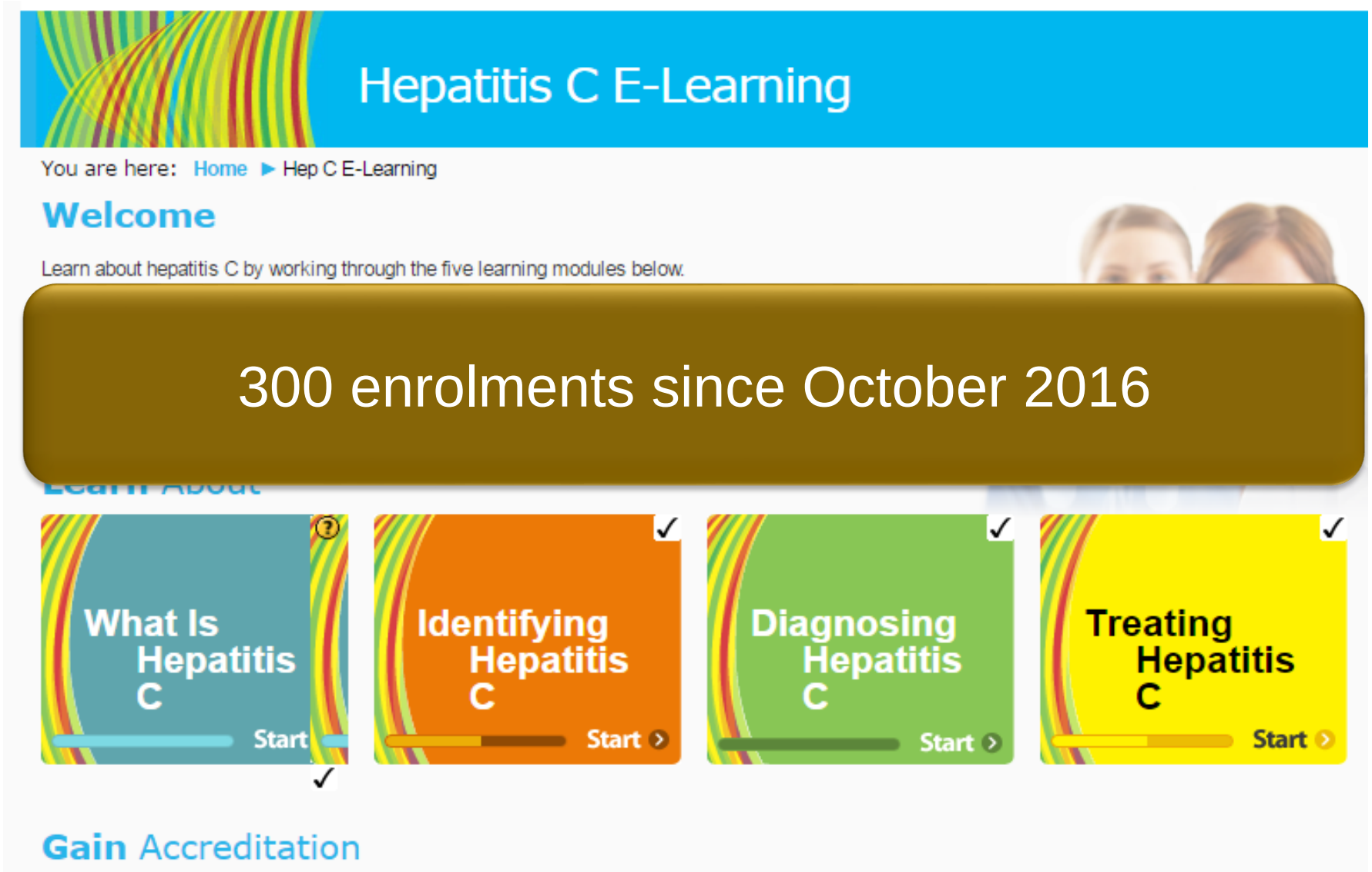
Patients with HCV GT 1a need addition of Ribavirin but those with HCV T 1b do NOT

PEARL-1 and PEARL-2: VIEKIRA PAK ± RBV



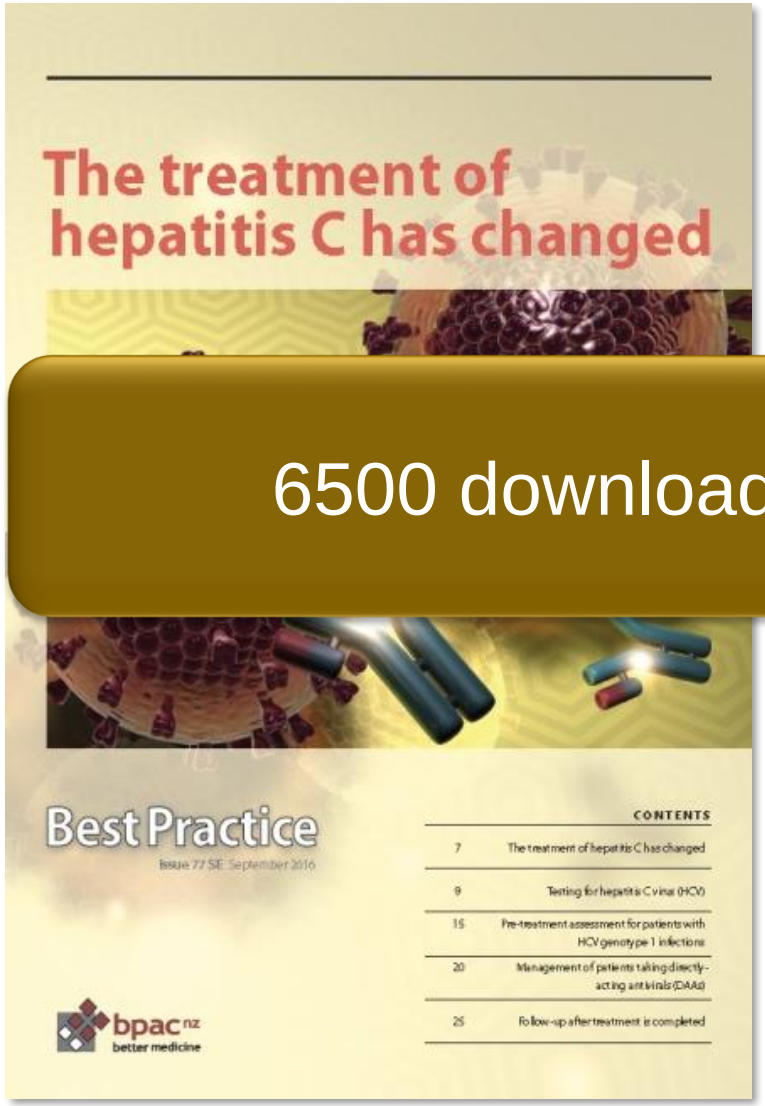
- Ferenci P, et al. N Eng J Med 2014;370:1983–92.

Ministry of Health e-learning



Ministry of Health e-learning. Available at: http://learnonline.health.nz/course/category.php?id=9

Ministry of Health /BPAC

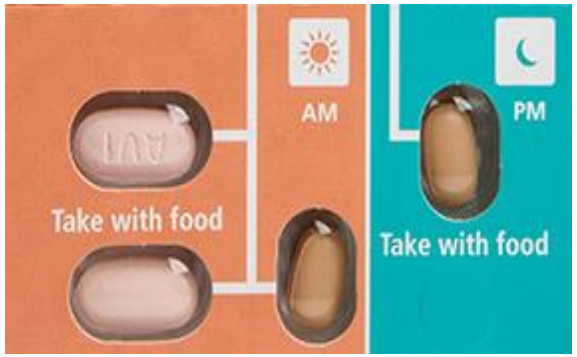


Available at:
http://www.bpac.org.nz/2016/hepc

6500 downloads since October 2016

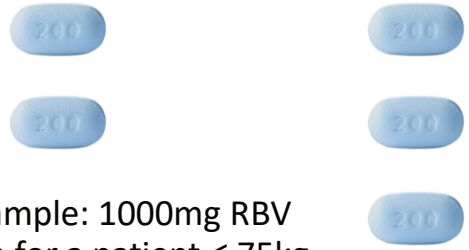
What the HCV GT 1a patient gets

Co-formulated paritaprevir/ritonavir (PTV/r) 75 mg/50 mg plus ombitasvir (OBV) 12.5 mg tablets



Dasabuvir (DSV) 250 mg tablets

Ribavirin, weight-based dose, 200 mg tablets



Example: 1000mg RBV dose for a patient ≤ 75kg

ABBVIE CARE PHARMACY PROGRAMME

Access to VIEKIRA PAK and VIEKIRA PAK-RBV

All prescribers, including GPs, can access fully funded VIEKIRA PAK or VIEKIRA PAK-RBV for their patients.

AbbVieCare Pharmacies have been trained and accredited to dispense these treatments, to provide relevant information about the medication to the patient, check for potential drug-drug interactions, and support patients on treatment.

Patient do not need to pay any pharmacy charges associated with accessing VIEKIRA PAK.

with you

abbvie care

*For patients prescribed 24 weeks of treatment, AbbVieCare pharmacies will receive two payments to cover 6 months of services.

AbbVie Care Pharmacies

- Any pharmacy can register to join the AbbVie Care Pharmacy Programme.
- More than 250 pharmacies are currently accredited.

with you abbvie care

Process for access to VIEKIRA PAK

1

Select the most convenient AbbVie Care Pharmacy for your patient from the list on www.viekira.co.nz/locations or www.pharmac.govt.nz/hepatitis-ctreatments.

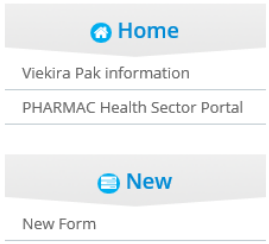
If a patient cannot access an accredited pharmacy please contact PHARMAC at Viekira@pharmac.govt.nz or 0800 023 588.

Patients who access VIEKIRA PAK via this alternative mechanism will still receive support via phone from a central pharmacy.

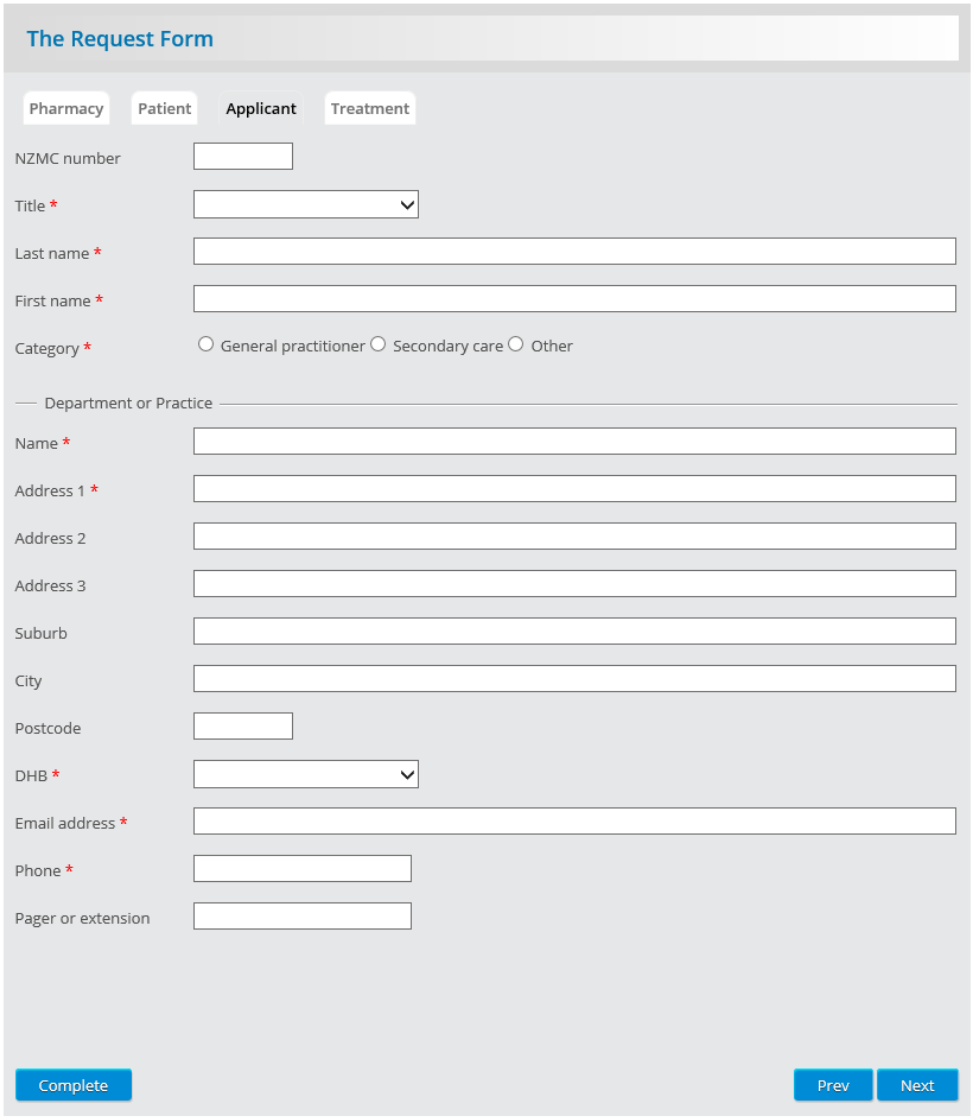
2

Complete PHARMAC's Request Form online at www.pharmac.govt.nz/hepatitis-c-treatments or print and fax the form.

PHARMAC online request form

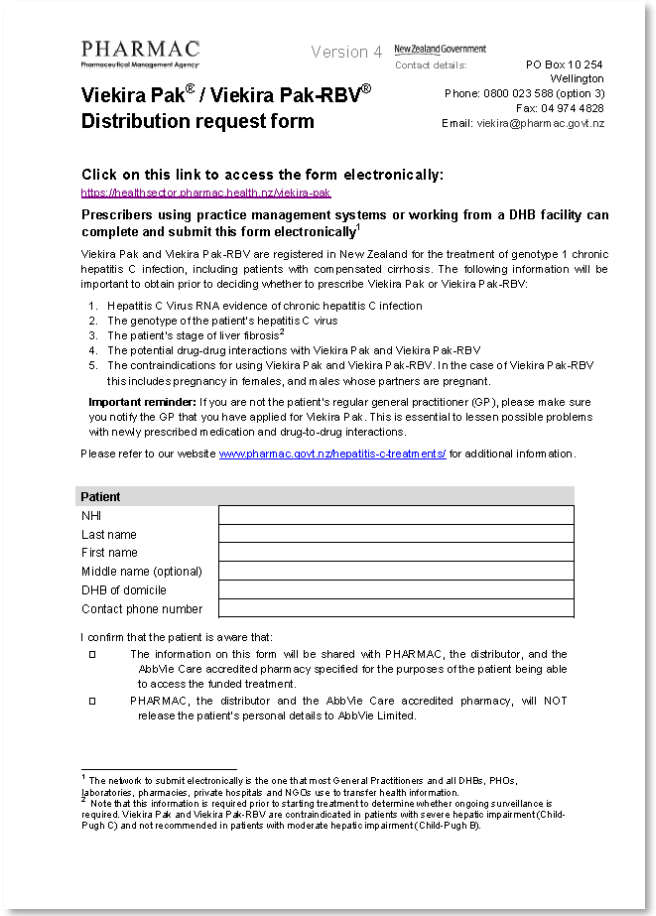


www.pharmac.govt.nz/hepatitis-c-treatments/



PHARMAC form to print or fax

www.pharmac.govt.nz/hepatitis-c-treatments/



PHARMAC
Pharmaceutical Management Agency

Version 4 New Zealand Government

Contact details: PO Box 10 254
Wellington
Phone: 0800 023 588 (option 3)
Fax: 04 974 4828
Email: viekira@pharmac.govt.nz

Viekira Pak® / Viekira Pak-RBV®
Distribution request form

Click on this link to access the form electronically:
https://healthsector.pharmac.health.nz/viekira-pak

Prescribers using practice management systems or working from a DHB facility can complete and submit this form electronically[1]

Viekira Pak and Viekira Pak-RBV are registered in New Zealand for the treatment of genotype 1 chronic hepatitis C infection, including patients with compensated cirrhosis. The following information will be important to obtain prior to deciding whether to prescribe Viekira Pak or Viekira Pak-RBV:

1. Hepatitis C Virus RNA evidence of chronic hepatitis C infection
2. The genotype of the patient's hepatitis C virus
3. The patient's stage of liver fibrosis[2]
4. The potential drug-drug interactions with Viekira Pak and Viekira Pak-RBV
5. The contraindications for using Viekira Pak and Viekira Pak-RBV. In the case of Viekira Pak-RBV this includes pregnancy in females, and males whose partners are pregnant.

Important reminder: If you are not the patient's regular general practitioner (GP), please make sure you notify the GP that you have applied for Viekira Pak. This is essential to lessen possible problems with newly prescribed medication and drug-to-drug interactions.

Please refer to our website www.pharmac.govt.nz/hepatitis-c-treatments/ for additional information.

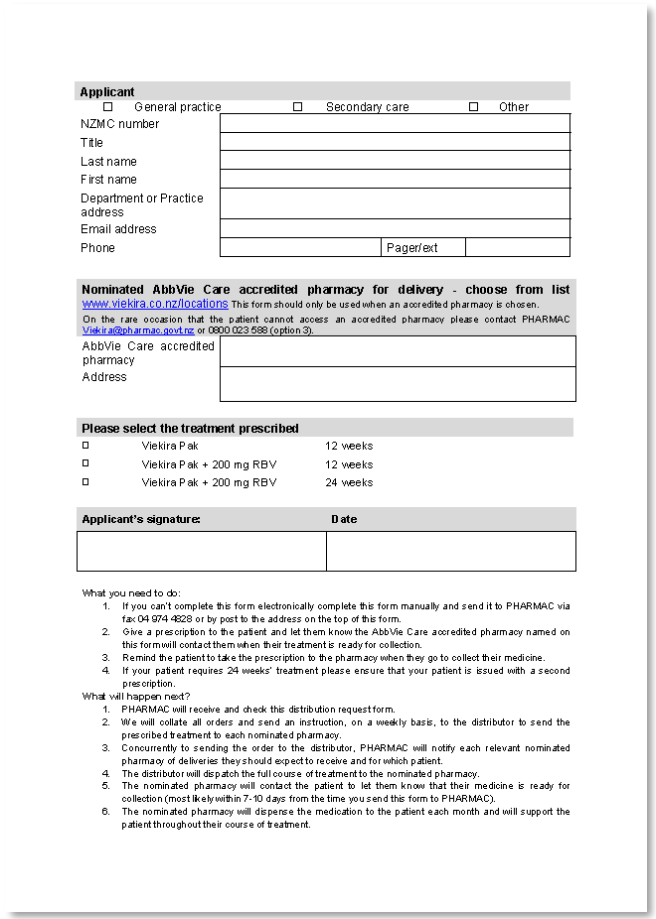
Patient

NHI	
Last name	
First name	
Middle name (optional)	
DHB of domicile	
Contact phone number	

I confirm that the patient is aware that:

- ☐ The information on this form will be shared with PHARMAC, the distributor, and the AbbVie Care accredited pharmacy specified for the purposes of the patient being able to access the funded treatment.
- ☐ PHARMAC, the distributor and the AbbVie Care accredited pharmacy, will NOT release the patient's personal details to AbbVie Limited.

[1] The network to submit electronically is the one that most General Practitioners and all DHBs, PHOs, laboratories, pharmacies, private hospitals and NGOs use to transfer health information.
[2] Note that this information is required prior to starting treatment to determine whether ongoing surveillance is required. Viekira Pak and Viekira Pak-RBV are contraindicated in patients with severe hepatic impairment (Child-Pugh C) and not recommended in patients with moderate hepatic impairment (Child-Pugh B).



Applicant

☐ General practice ☐ Secondary care ☐ Other

NZMC number			
Title			
Last name			
First name			
Department or Practice address			
Email address			
Phone		Pager/ext	

Nominated AbbVie Care accredited pharmacy for delivery - choose from list
www.viekira.co.nz/locations This form should only be used when an accredited pharmacy is chosen.
On the rare occasion that the patient cannot access an accredited pharmacy please contact PHARMAC Viekira@pharmac.govt.nz or 0800 023 588 (option 3).

AbbVie Care accredited pharmacy	
Address	

Please select the treatment prescribed

☐	Viekira Pak	12 weeks
☐	Viekira Pak + 200 mg RBV	12 weeks
☐	Viekira Pak + 200 mg RBV	24 weeks

Applicant's signature:	Date

What you need to do:

1. If you can't complete this form electronically complete this form manually and send it to PHARMAC via fax 04 974 4828 or by post to the address on the top of this form.
2. Give a prescription to the patient and let them know the AbbVie Care accredited pharmacy named on this form will contact them when their treatment is ready for collection.
3. Remind the patient to take the prescription to the pharmacy when they go to collect their medicine.
4. If your patient requires 24 weeks' treatment please ensure that your patient is issued with a second prescription.

What will happen next?

1. PHARMAC will receive and check this distribution request form.
2. We will collate all orders and send an instruction, on a weekly basis, to the distributor to send the prescribed treatment to each nominated pharmacy.
3. Concurrently to sending the order to the distributor, PHARMAC will notify each relevant nominated pharmacy of deliveries they should expect to receive and for which patient.
4. The distributor will dispatch the full course of treatment to the nominated pharmacy.
5. The nominated pharmacy will contact the patient to let them know that their medicine is ready for collection (most likely within 7-10 days from the time you send this form to PHARMAC).
6. The nominated pharmacy will dispense the medication to the patient each month and will support the patient throughout their course of treatment.

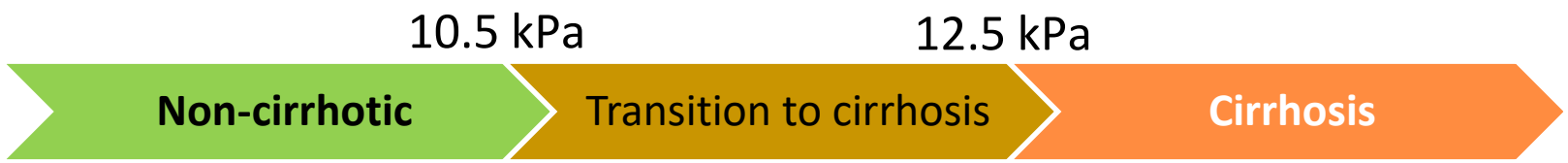
Process for access to VIEKIRA PAK

3 **Write a prescription for VIEKIRA PAK or VIEKIRA PAK-RBV** for your patient to take to the selected AbbVie Care Pharmacy.

4 **Advise the patient that the pharmacist will call** to let them know when the medicine has arrived and is ready for collection. (It may take up to a week). They will need to take their prescription to the AbbVieCare pharmacy.

Pre-treatment assessment for VIEKIRA PAK

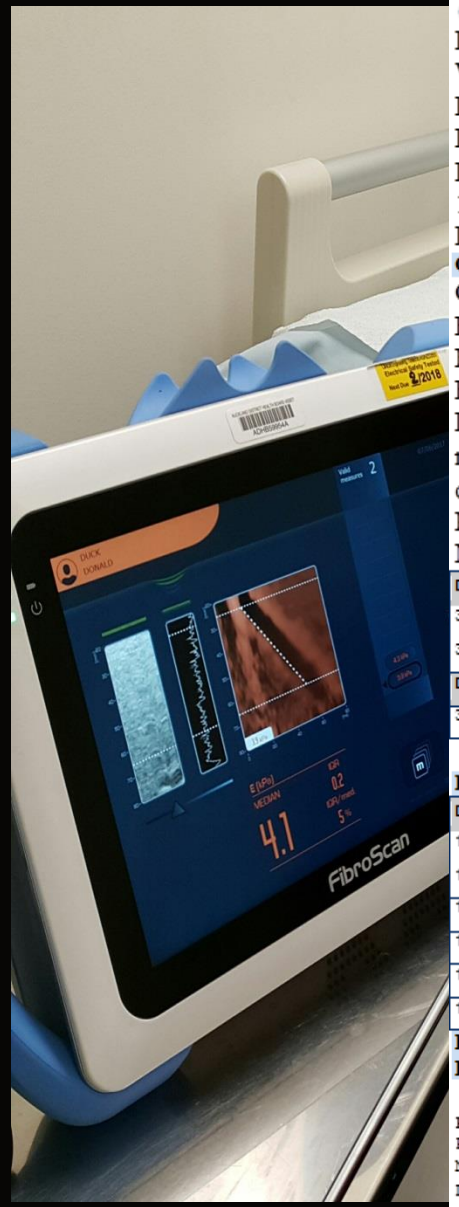
Tests	Rationale
Non-invasive liver staging	Patients with liver stiffness measurement (LSM) >10.5 kPa on Fibroscan or shear wave elastography: ***refer to secondary care***
Blood count	Low **platelet count** (<100 cells x10^9L) suggests portal hypertension and risk of AEs: ***refer to secondary care***
Liver function tests	Low albumin (<35 g/L) suggests cirrhosis***: refer to secondary care.***



All patients with cirrhosis, or in transition to cirrhosis, should be referred to secondary care for treatment and follow-up.

*If the FibroScan is unsuccessful, test serum markers. ***Refer to secondary care*** if APRI score (AST to Platelet Ratio Index) >1.00.

Gane, Stedman. NZSG Treatment Guidelines. 2016. Available at http://www.nzsg.org.nz/cms2/guidelines/ Accessed December 2016.
AbbVie Limited. VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe New Zealand; version10: May 2017.



Referral Sent and Acknowledged on 03/05/2017 11:28 NZST

Top of Form

ADHB Hepatitis Referral for Outpatient Appointment

Patient: Donald J Duck, 62yrs, **NHI AAA1111**, M, DOB 01/01/1951, PH: Wrk 022 000 4444, Hme 888 11111
Residential address: 22 Disney Lane, Annaheim, Auckland 01111
Postal address: same as residential address
Referred by: Graham Gulbransen, Kingsland Family Health Centre, NZMC 11258, PH 815 1475, FAX 846 7195
Referral date: 03/05/2017 11:28 NZST

Clinical Referral Information

GASTROENTEROLOGY - HEPATITIS
Reason for referral:
Fibroscan
Referral details:
Date: 03/05/2017 11:27:01 would like hep C treatment
no needle use
considering VIEKIRA PAK compassionate supply
Poor venous access
Measurement Details

Date	Code	Value
30/09/2015	Height	174
30/09/2015	Weight	70.6
Date	**Code**	**Value**
30/09/2015	BMI	23.3

Diagnostic Reports / Patient Documents

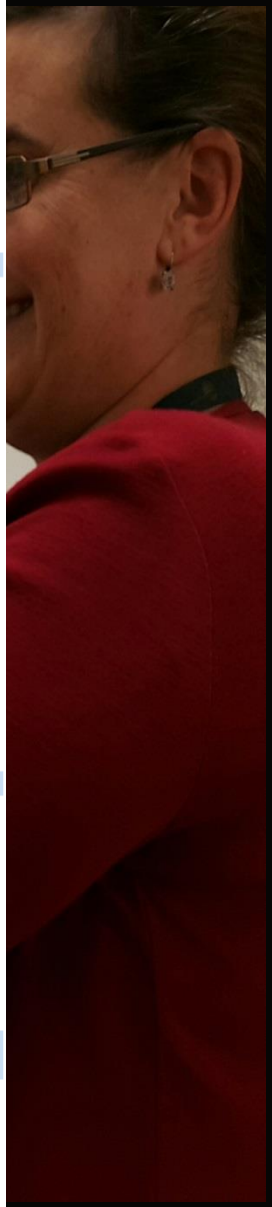
Date	Name	Comments	Size
19/12	Hcv Genotyping	GT 1a gg	1 KB
19/12	Alpha Fetoprotein	3.2 gg	1 KB
19/12	Hep C Viral Load	pos gg	1 KB
19/12	Diabetic Profile	33 gg	1 KB
19/12	Complete Blood Count	Hb 108 hcv gg	2 KB
19/12	Liver Function Tests	ggt 116 gg	1 KB

File Attachments - No files attached

Diagnostic Reports / Patient Documents - Hcv Genotyping

Patient Details
Patient Name: Duck, Donald
NHI No:
Date of Birth: 01-Jan-1954

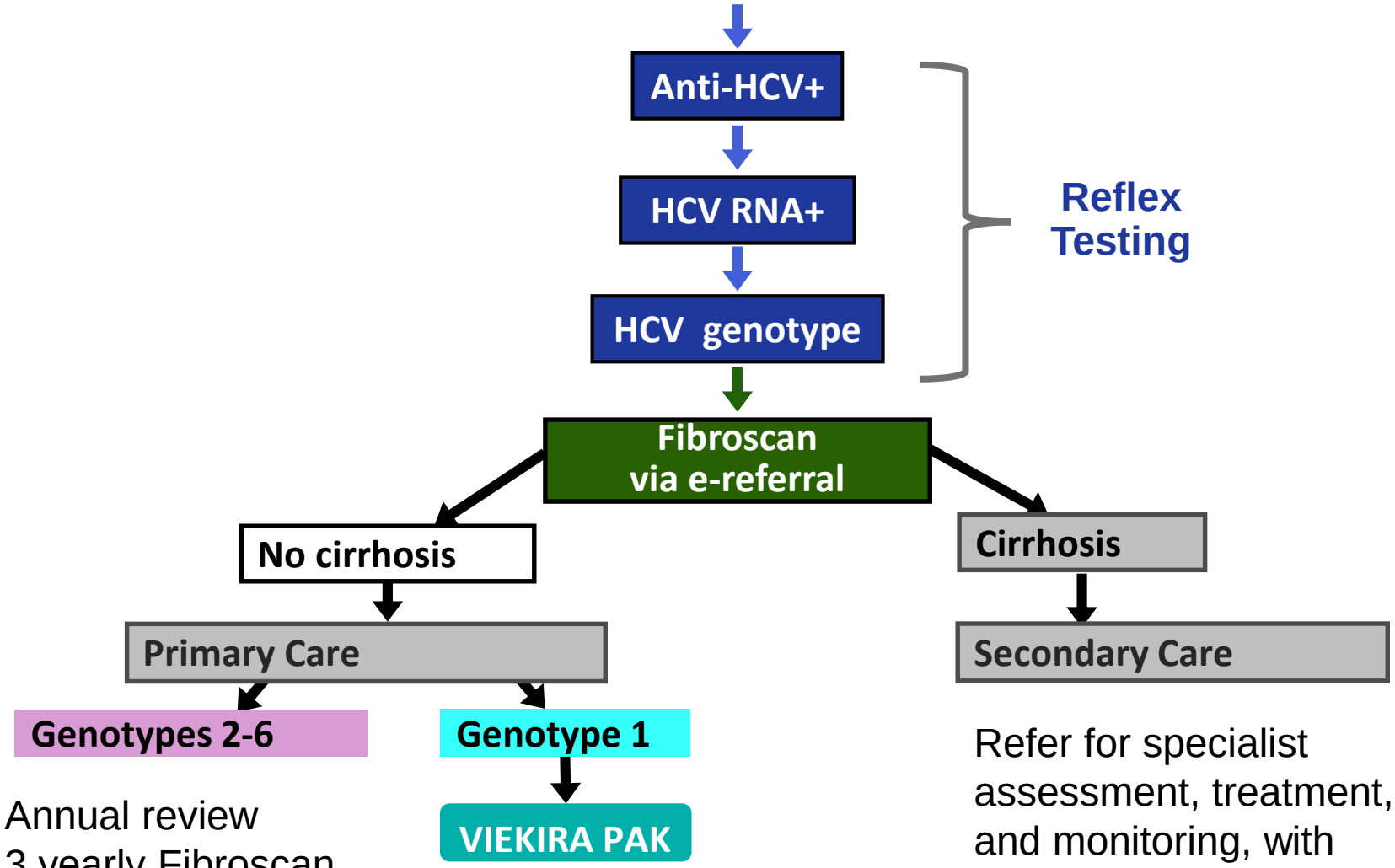
HCV Genotyping Result: 1a
Please note this assay has been recently updated and is now performed on a different platform. Please refer to the
LabPlus test guide for new detection limits and assay details.



Can cirrhosis status be determined if Fibroscan unavailable?

1. Previous biopsy (within 5 years)
2. Serum test: AST to Platelet Ratio Index (APRI)
   - <1.0 = no cirrhosis ⇨ treat in General Practice
   - ≥1.0 = possible cirrhosis ⇨ refer to Secondary Care
   - Use the free on-line calculator:
     https://www.mdcalc.com/ast-platelet-ratio-index-apri

RISK FACTORS FOR HCV EXPOSURE?



Annual review
3 yearly Fibroscan
Peg/RBV, generics?

Refer for specialist assessment, treatment, and monitoring, with long-term follow-up for hepatocellular carcinoma (HCC).

Case study #4

Sarah

Age	28 years	
HCV genotype	1a, HCV RNA 5.6 log IU/mL	
HCV treatment history	None – treatment-naive	
Fibrosis stage	Liver stiffness 6.8 kPa. F1.	
Comorbidities	Depression Gastroesophageal reflux disease	
Medications	Citalopram 10mg od St John's wort 300mg tid Omeprazole 20mg od Norethisterone 0.5 mg od	
Bloods	Haemoglobin Bilirubin ALT Albumin Platelets	103 g/L 14 µmol/L 40 IU/L 41 g/L 210,000 cells/mm^3

Can GP treat her or should she be referred to secondary care?

ALT = alanine aminotransferase

Case study #4

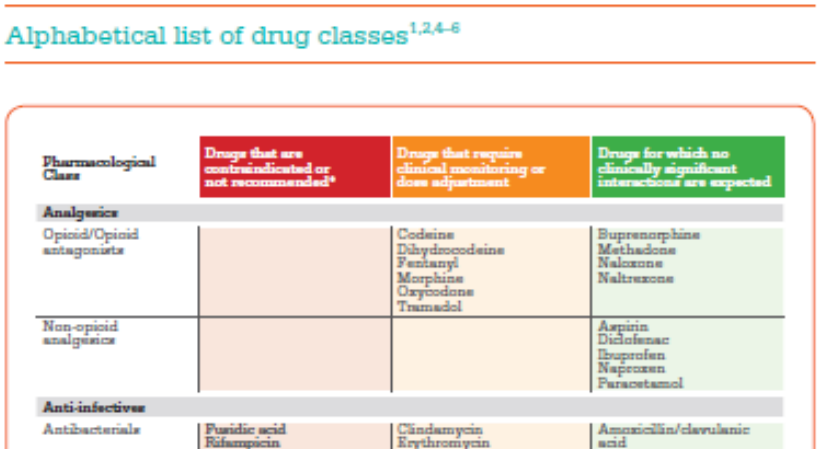
Sarah

Age	28 years	
HCV genotype	1a, HCV RNA 5.6 log IU/mL	
HCV treatment history	None – treatment-naive	
Fibrosis stage	Liver stiffness 6.8 kPa. F1.	
Comorbidities	Depression Gastroesophageal reflux disease	
Medications	Citalopram 10mg od St John's wort 300mg tid Omeprazole 20mg od Norethisterone 0.5 mg od	
Bloods	Haemoglobin Bilirubin ALT Albumin Platelets	103 g/L 14 µmol/L 40 IU/L 41 g/L 210,000 cells/mm^3

What else do we need to consider?

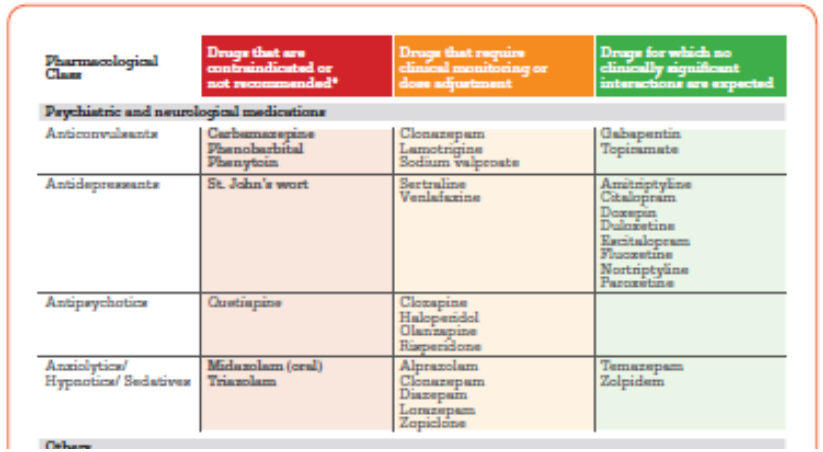
ALT = alanine aminotransferase

Printed resource: AbbVie Guide to Managing DDIs

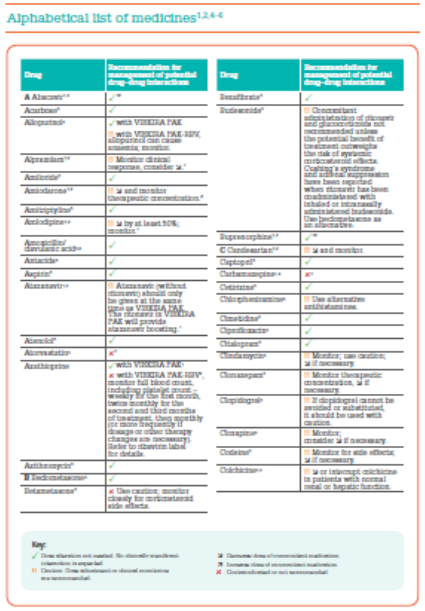


Alphabetical list of drug classes[1,2,4–6]

Pharmacological Class	Drugs that are contraindicated or not recommended*	Drugs that require clinical monitoring or dose adjustment	Drugs for which no clinically significant interactions are expected
Analgesics			
Opioid/Opioid antagonists		Codeine Dihydrocodeine Fentanyl Morphine Oxycodone Tramadol	Buprenorphine Methadone Naloxone Naltrexone
Non-opioid analgesics			Aspirin Diclofenac Ibuprofen Naproxen Paracetamol
Anti-infectives			
Antibacterials	Fusidic acid Rifampicin	Clindamycin Erythromycin	Amoxicillin/clavulanic acid



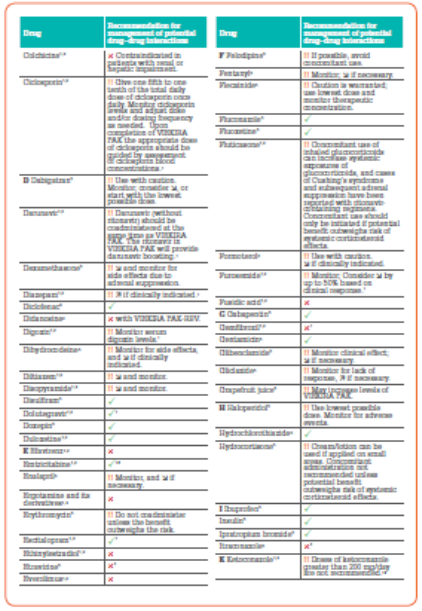
Pharmacological Class	Drugs that are contraindicated or not recommended*	Drugs that require clinical monitoring or dose adjustment	Drugs for which no clinically significant interactions are expected
Psychiatric and neurological medications			
Anticonvulsants	Carbamazepine Phenobarbital Phenytoin	Clonazepam Lamotrigine Sodium valproate	Gabapentin Topiramate
Antidepressants	St. John's wort	Sertraline Venlafaxine	Amitriptyline Citalopram Dosepin Duloxetine Escitalopram Fluoxetine Nortriptyline Paroxetine
Antipsychotics	Quetiapine	Clozapine Haloperidol Olanzapine Risperidone	
Anxiolytics/ Hypnotics/ Sedatives	Midazolam (oral) Triazolam	Alprazolam Clonazepam Diazepam Lorazepam Zopiclone	Temazepam Zolpidem
Others			



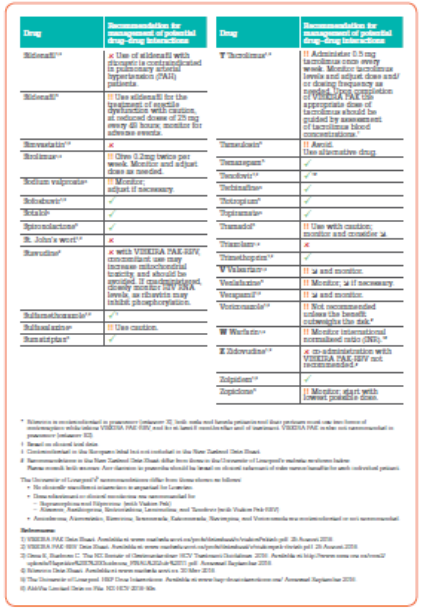
Alphabetical list of medicines[1,2,4–6]

Drug	Recommendation for management of potential drug–drug interactions
A Abacavir[1,2]	✓*
Acarbose[1]	✓
Allopurinol[1]	✓ with VIEKIRA PAK ↓ with VIEKIRA PAK-XR, suboptimal dose cause anaemia; monitor.
Alprazolam[1,2]	↕ Monitor clinical response, consider ↓.[1]
Amiloride[1]	✓
Amiodarone[1,2]	↕ ↓ and monitor therapeutic concentration.*
Amitriptyline[1]	✓
Amlodipine[1,2]	↕ ↓ by at least 50%; monitor.[1]
Amoxicillin/ clavulanic acid[1,2]	✓
Antacids[1]	✓
Aspirin[1]	✓
Atazanavir[1,2]	↕ Atazanavir (without ritonavir) should only be given at the same time as VIEKIRA PAK. The ritonavir in VIEKIRA PAK will provide atazanavir boosting.[1]
Atenolol[1]	✓
Atorvastatin[1]	↓*
Azathioprine	✓ with VIEKIRA PAK ↓ with VIEKIRA PAK-XR*, monitor full blood count, including platelet count, weekly for the first month, twice monthly for the second and third months of treatment, then monthly (or more frequently if dosage or other therapy changes are necessary). Refer to ribavirin label for details.
Azithromycin[1]	✓
B Betamethasone[1,2]	✓
Betamethasone[1]	✕ Use caution, monitor closely for corticosteroid side effects.
Bezafibrate[1]	✓
Budesonide[1]	↕ Concomitant administration of ritonavir and glucocorticoids not recommended unless the potential benefit of treatment outweighs the risk of systemic corticosteroid effects. Cushing's syndrome and adrenal suppression have been reported when ritonavir has been coadministered with inhaled or intranasally administered budesonide. Use beclomethasone as an alternative.
Buprenorphine[1,2]	✓**
C Candesartan[1,2]	↕ ↓ and monitor.
Captopril[1]	✓
Carbamazepine[1,2]	↓*
Cetirizine[1]	✓
Chlorpheniramine[1]	↕ Use alternative antihistamines.
Cimetidine[1]	✓
Ciprofloxacin[1]	✓
Citalopram[1]	✓
Clindamycin[1]	↕ Monitor, use caution; ↓ if necessary.
Clonazepam[1]	↕ Monitor therapeutic response/sedation, ↓ if necessary.
Clopidogrel[1]	↕ If clopidogrel cannot be avoided or substituted, it should be used with caution.
Clozapine[1]	↕ Monitor; consider ↓ if necessary.
Codeine[1]	↕ Monitor for side effects; ↓ if necessary.
Colchicine[1,2]	↕ ↓ or interrupt colchicine in patients with normal renal or hepatic function.

Key:
✓ Drug effective and marketed. No clinically significant interaction is expected.
↕ Caution. Dose adjustment or clinical monitoring may be recommended.
↓ Decrease dose of concomitant medication.
↑ Increase dose of concomitant medication.
✕ Contraindicated or not recommended.



Drug	Recommendation for management of potential drug–drug interactions
Colchicine[1,2]	✕ Contraindicated in patients with renal or hepatic impairment.
Ciclosporin[1,2]	↕ Give one fifth to one tenth of the total daily dose of ciclosporin once daily. Monitor ciclosporin levels and adjust dose and/or dosing frequency as needed. Upon completion of VIEKIRA PAK the appropriate dose of ciclosporin should be guided by assessment of ciclosporin blood concentrations.[1]
D Dabigatran[1]	↕ Use with caution. Monitor: consider ↓, or start with the lowest possible dose.
Darunavir[1,2]	↕ Darunavir (without ritonavir) should be coadministered at the same time as VIEKIRA PAK. The ritonavir in VIEKIRA PAK will provide darunavir boosting.[1]
Dexamethasone[1]	↕ ↓ and monitor for side effects due to adrenal suppression.
Diazepam[1,2]	↕ ↓ if clinically indicated.[1]
Diclofenac[1]	✓
Didanosine[1]	✕ with VIEKIRA PAK-XR
Digoxin[1,2]	↕ Monitor serum digoxin levels.[1]
Dihydrocodeine[1]	↕ Monitor for side effects, and ↓ if clinically indicated.
Diltiazem[1,2]	↕ ↓ and monitor.
Diazepramide[1,2]	↕ ↓ and monitor.
Disulfiram[1]	✓
Dolasetron[1,2]	✓*
Donepezil[1]	✓
Duloxetine[1,2]	✓
E Efavirenz[1,2]	✕
Escitalopram[1,2]	✓**
Esomeprazole[1]	↕ Monitor, and ↓ if necessary.
Estradiol[1]	✕
Erythromycin[1]	↕ Do not coadminister unless the benefit outweighs the risk.
Escitalopram[1,2]	✓
Ethinylestradiol[1,2]	✕
Etoricoxib[1,2]	✓
Everolimus[1,2]	✕
F Felodipine[1]	↕ If possible, avoid concomitant use.
Fentanyl[1]	↕ Monitor; ↓ if necessary.
Flecainide[1]	↕ Caution is warranted; use lowest dose and monitor therapeutic concentration.
Fluconazole[1,2]	✓
Fluoxetine[1]	✓
Fluticasone[1,2]	↕ Concomitant use of inhaled glucocorticoids can increase systemic exposures of glucocorticoids, and cases of Cushing's syndrome and subsequent adrenal suppression have been reported with ritonavir-containing regimens. Concomitant use should only be initiated if potential benefit outweighs risk of systemic corticosteroid effects.
Formoterol[1]	↕ Use with caution. ↓ if clinically indicated.
Furosemide[1,2]	↕ Monitor; Consider ↓ by up to 50% based on clinical response.[1]
Fusidic acid[1,2]	✕
G Gabapentin[1,2]	✓
Gemfibrozil[1,2]	↓*
Goserelin[1,2]	✓
Haloperidol[1,2]	↕ Monitor clinical effect; ↓ if necessary.
Ibrutinib[1,2]	↕ Monitor for lack of response, ↑ if necessary.
Imatinib[1,2]	↕ Monitor for lack of response, ↑ if necessary.
Irbesartan[1,2]	↕ ↓ and monitor.*
Itraconazole[1,2]	↕ Monitor; ↓ if necessary.
K Ketoconazole[1,2]	↕ Dose of ketoconazole greater than 200 mg/day (as oral suspension) is not recommended.[1,2]
L Lamivudine[1,2]	✓*
Lamotrigine[1]	↕ Monitor; ↓ if necessary.
Lansoprazole[1]	↕ Monitor for lack of response, ↑ if necessary.
Levonorgestrel[1]	✓
Levothyroxine[1]	↕ Monitor; adjust levothyroxine dose if needed. Monitor levels of thyroid stimulating hormone (TSH).
Lidocaine[1,2]	↕ ↓ and monitor therapeutic concentration (if available).[1]
Lisinopril[1]	✓
Loperamide[1,2]	↕*
Loratadine[1]	↕ Monitor for increased drowsiness.
Lorazepam[1]	↕ Monitor; ↓ if clinically indicated.
Losartan[1,2]	↕ ↓ and monitor.*
M Maraviroc[1]	↕ Monitor; ↓ if necessary.
Metformin[1,2]	✓*
Methadone[1,2]	✓*
Metoclopramide[1]	✓
Metoprolol[1]	✓
Mifepristone[1]	✕
Midazolam[1]	↕ Monitor for side effects; ↓ if necessary.
Montelukast[1]	↕ Monitor; ↓ if necessary.
N Nadolol[1]	✓
Naloxone[1,2]	✓*
Naltrexone[1]	✓
Naproxen[1]	✓
Nevirapine[1,2]	✕*
Nifedipine[1,2]	↕ Start with the lowest possible dose. Clinical monitoring of calcium channel blockers is recommended.
Nortriptyline[1,2]	✓
O Olanzapine[1,2]	↕ Monitor.
Omeprazole[1,2]	↕ ↑ if clinically indicated.[1]
Oxycodone[1]	↕ Monitor; ↓ if necessary.
P Paracetamol[1,2]	✓
Paroxetine[1]	✓
Penicillin V[1]	✓
Phenobarbital[1,2]	✕
Phenytoin[1,2]	✕
Pioglitazone[1]	↕ Monitor; ↓ if necessary.
Pravastatin[1,2]	↕ Pravastatin dose should not exceed 40 mg per day.*
Prednisone[1]	↕ Use with caution. Monitor response.
Prochlorperazine[1]	↕ Monitor; start with the lowest dose of prochlorperazine.
Propafenone[1,2]	↕ Monitor; consider ↓. Use caution; monitor therapeutic concentration (if available).
Q Quetiapine[1,2]	↓ Not recommended. ↓ to 1/6th of the current dose and monitor for quetiapine-associated adverse reactions.*
R Rabeprazole[1,2]	✓*
Ranitidine[1]	✓
Ribavirin[1,2]	↕ Monitor; ↓ by at least three-quarters of the usual dose of 200 mg/day (e.g., 150 mg every other day or three times a week). Further ↓ may be necessary.
Rifampicin[1,2]	✕
Rilpivirine[1,2]	✕ Not recommended unless the benefit outweighs the risk due to potential for QT interval prolongation with higher concentrations of rilpivirine.*
Risperidone[1,2]	↕ Monitor; ↓ if necessary.
Ritonavir[1,2]	✕
Rosuvastatin[1,2]	↕ Rosuvastatin dose should not exceed 10 mg per day.*
S Salbutamol[1]	✓
Salmeterol[1,2]	✕
Sertraline[1]	↕ Caution should be used; monitor; ↓ if necessary.



Drug	Recommendation for management of potential drug–drug interactions
Sildenafil[1,2]	✕ Use of sildenafil with ritonavir is contraindicated in pulmonary arterial hypertension (PAH) patients.
Sildenafil[1]	↕ Use sildenafil for the treatment of erectile dysfunction with caution, at reduced dose of 25 mg every 48 hours; monitor for adverse events.
Simvastatin[1,2]	✕
Strontium[1,2]	↕ Does 2.2mg twice per week. Monitor and adjust dose as needed.
Sodium valproate[1]	↕ Monitor; adjust if necessary.
Sulindac[1,2]	✓
Sotalol[1]	✓
Spironolactone[1]	✓
St. John's wort[1,2]	✕
Sunvitine[1]	✕ with VIEKIRA PAK-SDV, concomitant use may increase mitochondrial toxicity and should be avoided. If concomitant, closely monitor HIV-RNA levels, as ritonavir may inhibit phosphorylation.
Sulfamethoxazole[1,2]	✓
Sulfasalazine[1]	↕ Use caution.
Sumatriptan[1]	✓
T Tacrolimus[1,2]	↕ Administer 0.5 mg tacrolimus once every week. Monitor tacrolimus levels and adjust dose and/or dosing frequency as needed. Upon completion of VIEKIRA PAK the appropriate dose of tacrolimus should be guided by assessment of tacrolimus blood concentrations.[1]
Tamoxifen[1]	↕ Avoid. Use alternative drug.
Temazepam[1]	✓
Tenofovir[1,2]	✓*
Terbinafine[1]	✓
Tetracycline[1]	✓
Theophylline[1]	✓
Topiramate[1]	✓
Tramadol[1]	↕ Use with caution; monitor and consider ↓.
Triazolam[1,2]	✕
Trimethoprim[1,2]	✓
V Valsartan[1,2]	↕ ↓ and monitor.
Venlafaxine[1]	↕ Monitor; ↓ if necessary.
Verapamil[1,2]	↕ ↓ and monitor.
Voriconazole[1,2]	↕ Not recommended unless the benefit outweighs the risk.*
W Warfarin[1,2]	↕ Monitor international normalised ratio (INR).*
Z Zidovudine[1,2]	✕ co-administration with VIEKIRA PAK-SDV not recommended.*
Zolpidem[1,2]	✓
Zopiclone[1]	↕ Monitor; start with lowest possible dose.

NZ Data Sheet: drug interactions with VIEKIRA PAK

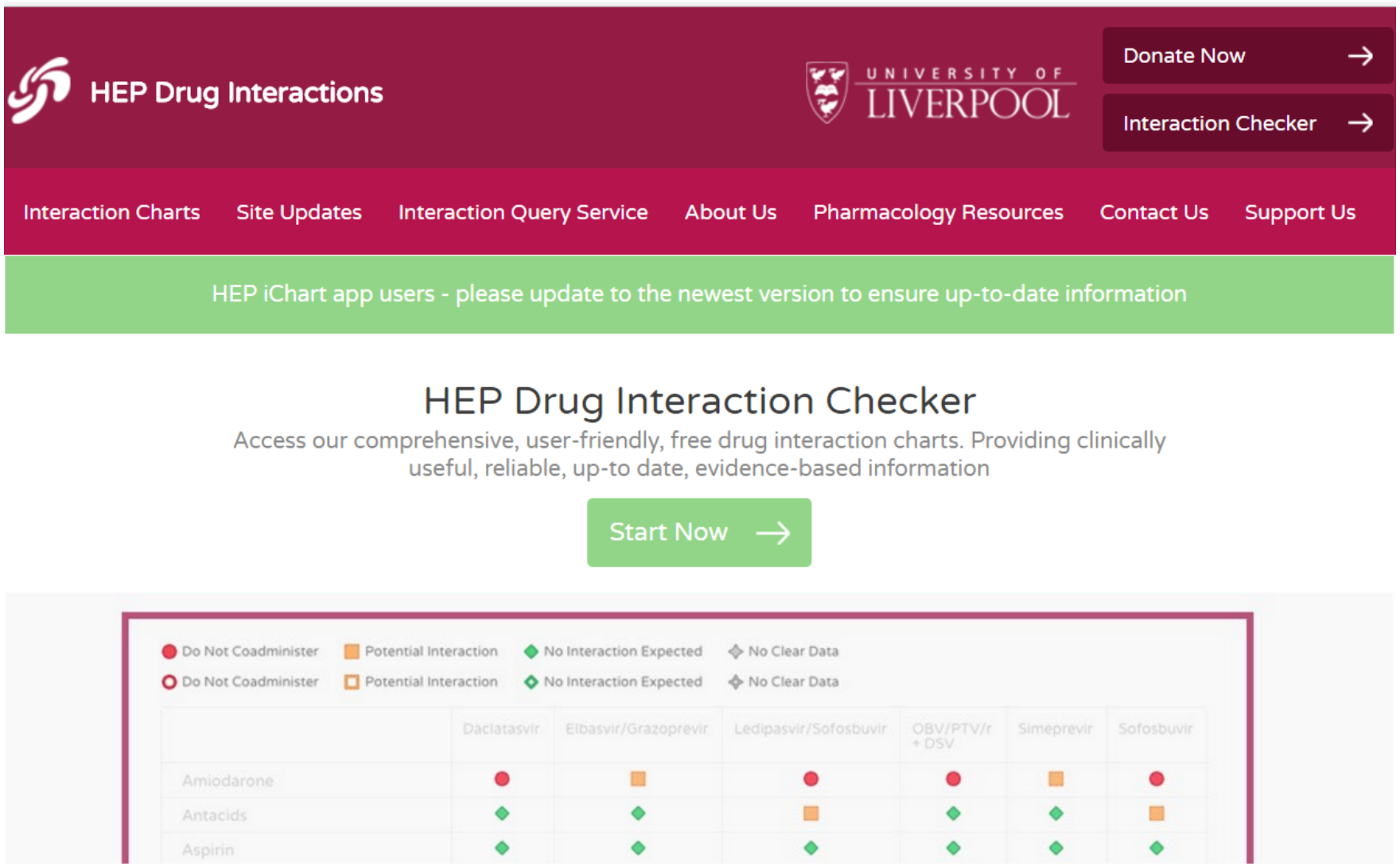
No restrictions	Caution / dose adjustment / clinical monitoring	Contraindicated/ not recommended
Abacavir	Alprazolam	Atorvastatin
Buprenorphine	Amiodarone†	Carbamazepine
Dolutegravir	Amlodipine	Colchicine in renal or hepatic impairment
Duloxetine	Atazanavir	Darunavir
Emtricitabine	Cyclosporine	Efavirenz
Escitalopram	Diazepam	Ergotamine and its derivatives
Lamivudine	Digoxin	Ethinyloestradiol-containing products
Metformin	Flecainide	Fluticasone†
Methadone	Furosemide	Fusidic Acid
Naloxone	Ketoconazole†	Gemfibrozil
Norethisterone	Lidocaine (systemic)	Oral Midazolam
Paracetamol	Omeprazole‡	Phenobarbital
Raltegravir	Pravastatin	Phenytoin
Sulfamethoxazole	Propafenone	Ranolazine
Tenofovir	Rosuvastatin	Rifampicin
Trimethoprim	Quetiapine†	Rilpivirine
		Ritonavir
		Sildenafil*
		Simvastatin
		Salmeterol
		St. John's wort
		Tacrolimus
		Terfenadine
		Triazolam

*Contraindicated for treatment of pulmonary arterial hypertension; for erectile dysfunction, reduced dose frequency is recommended. †Contraindicated in Liverpool website but not NZ Data Sheet. ‡Weak interaction.

This is not an exhaustive list. Please refer to the full Data Sheets and the University of Liverpool's Hep-Drug Interaction website.

AbbVie Limited. VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe New Zealand; version 10: May 2017.
University of Liverpool HIV & HEPATITIS Pharmacology Group. Hepatitis Drug Interactions. www.hep-druginteractions.org

Potential drug-drug interactions



University of Liverpool HIV & HEPATITIS Pharmacology Group. Hepatitis Drug Interactions. www.hep-druginteractions.org Accessed Feb 2016.

Drug–drug interactions

www.hep-druginteractions.org

Antidepressants	VIEKIRA PAK	
Citalopram	◆	No clinically significant interaction expected.
St John's wort	●	**Contraindicated** St John's Wort is CYP3A4 inducer and decreases exposure to VIEKIRA PAK.
Gastrointestinal agents		
Omeprazole *Omezol Relief*	■	Potential weak interaction. Monitor patients for decreased efficacy of omeprazole. Consider increasing omeprazole dose if symptoms are not well controlled
Contraceptives		
Norethisterone *Noriday*	■	Contraindicated if in combination pill with ethinyloestradiol. Can be administered as a progestin only pill; no dose alteration is required.

Sarah's omeprazole dose was 20 mg od.

Case study #4

Sarah

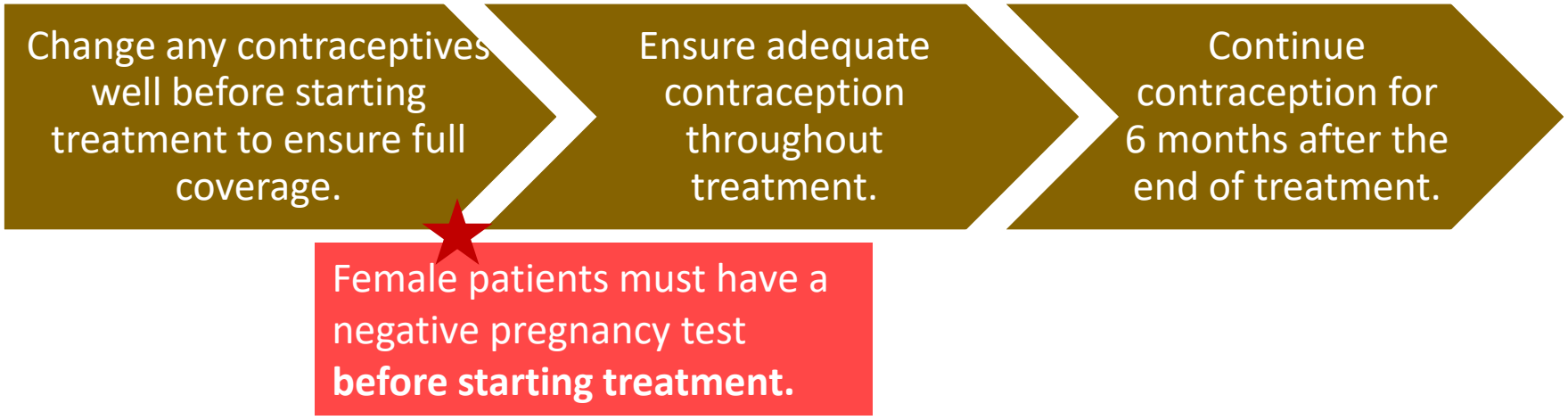
Age	28 years	
HCV genotype	1a	
Fibrosis stage	Liver stiffness 6.8 kPa (F1).	
Comorbidities	Depression Gastroesophageal reflux disease	
Medications	Citalopram 10mg od **St John's Wort 300mg tid** Omeprazole 20mg od Norethisterone 0.5 mg od	Citalopram 10mg od Omeprazole 40mg od Norethisterone 0.5 mg od
Bloods	Haemoglobin Bilirubin ALT Albumin Platelets	103 g/L 14 µmol/L 40 IU/L 41 g/L 210,000 cells/mm^3

Any other concerns?

Pregnancy is contraindicated due to teratogenicity of RBV.

Pre-treatment assessment: pregnancy and contraception

- Pregnancy is **contraindicated** while using VIEKIRA PAK-RBV
- Breast feeding is **contraindicated** while using VIEKIRA PAK-RBV
- WOCBP should use 2 forms of contraception BUT OC containing ethinyl oestradiol is contraindicated.



AbbVie Limited. VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe New Zealand; version 10: May 2017.

Case study #4

Sarah

Age	28 years	
HCV genotype	1a	
HCV treatment history	None – treatment-naive	
Fibrosis stage	Liver stiffness 6.8 kPa. F1.	
Comorbidities	Depression Gastroesophageal reflux disease	
Medications	Citalopram 10mg od Omeprazole 20mg od Norethisterone 0.5 mg od	
Bloods	Haemoglobin	103 g/L
	Bilirubin	14 µmol/L
	ALT	40 IU/L
	Albumin	41 g/L
	Platelets	210,000 cells/mm^3

Any other concerns?

Week 5 of treatment: Hb dropped to 84 g/L … Thoughts?

ALT = alanine aminotransferase

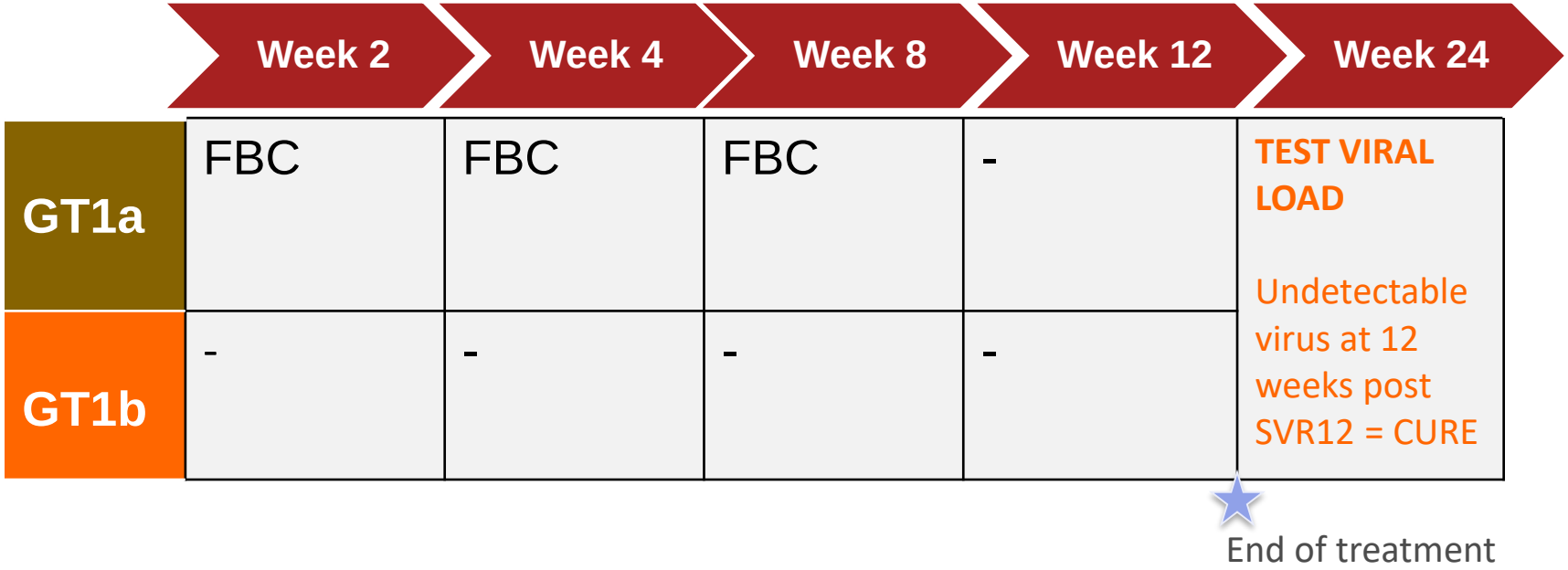
Safety monitoring: Ribavirin

- Ribavirin (RBV) causes dose-related haemolysis and anaemia.
- Haemoglobin should be monitored during treatment, and the dose of RBV reduced if necessary.
- Caution in renal dysfunction, severe vascular disease
- Consult Data Sheets and Guidelines for recommendations on starting dose of RBV, monitoring during treatment, and dose reduction or discontinuation.*

In clinical trials, 8% of patients required RBV dose to be reduced because of anaemia.
SVR12 was still 99% (i.e. not reduced).

VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe New Zealand; version 10: May 2017.
Gane, Stedman. NZ Society of Gastroenterology HCV Treatment Guidelines. 2016. http://www.nzsg.org.nz/cms2/guidelines/ Accessed December 2016

VIEKIRA PAK-RBV: safety monitoring during treatment



Gane, Stedman. NZSG Treatment Guidelines. 2016. Available at http://www.nzsg.org.nz/cms2/uploads/2017/NZSG%20Hepatitis%20C%20Guidance_November%20UPDATE.pdf

FBC = Full Blood Count; LFT = liver function tests.

VIEKIRA PAK-RBV: Management of anaemia

Discontinue RBV (Hb 84g/L) but continue VIEKIRA PAK

	Reduce RBV to 600mg/day if:	Discontinue RBV* if:
Patient without cardiac disease	Hb <100 g/l	Hb <85 g/l
Stable cardiac disease	>20 g/L decrease in Hb during any 4-week period on treatment	Hb <120 g/L despite 4 weeks at reduced dose

**If the abnormality is reversed, restart RBV at 600 mg daily, and further increase to 800 mg.*

Case study #4

Sarah

♀

Age	28 years
HCV genotype	1a
HCV treatment history	None – treatment-naïve
Fibrosis stage	Liver stiffness 6.8 kPa. F1.
Comorbidities	Depression ase
Post	use 2 forms of after the last ctors for re-infection. • Asked to return for an HCV RNA test at 12 weeks post-treatment to check for SVR. • No further ongoing liver surveillance required.

CURED!!

Sarah's HCV RNA test 12 weeks after she completed treatment was negative

Case study #5

Russell

HCV genotype	1b
HCV treatment history	None – treatment-naive
Fibrosis stage	Liver stiffness 9.0 kPa (F2 fibrosis)

Age	68 years
Body mass index	29 kg/m^2
Comorbidities	Hypertension Insomnia Asthma Depression
Medications	Zopiclone 7.5 mg most nights Paracetamol prn Metoprolol 97.5 mg mane Ventolin inhaler PRN Flixotide inhaler 2 puffs od Venlafaxine 37.5mg od

ALT = alanine aminotransferase; eGFR = estimated glomerular filtration rate

Drug–drug interactions

www.hep-druginteractions.org

V IEKIRA PAK

Sedatives		
Zopiclone	■	Start with 3.75 mg zopiclone and monitor.
Beta blockers		
Metoprolol	◆	No clinically significant interaction expected
Bronchodilator		
Salbutamol *Ventolin*	◆	No clinically significant interaction expected.
Corticosteroid		
Fluticasone propionate *Flixotide*	■	Fluticasone is a substrate of CYP3A4; Exposure increases with ritonavir, may cause Cushing's Syndrome ⇨switch to beclomethasone
Antidepressant		
Venlafaxine *Efexor*	■	Venlafaxine substrate of CYP2D6, CYP3A4 P-gp. Exposure increased by ritonavir. Monitor and decrease venlafaxine dose if needed.

Other PRN medications?

www.hep-druginteractions.org

VIEKIRA PAK

Corticosteroid	
Hydrocortisone butyrate *Locoid cream*	Topical hydrocortisone cream/lotion can be used if applied on small areas.
And…	
Sildenafil *Viagra*	Sildenafil is a substrate of CYP3A4; and exposure may increase due to ritonavir. Increased potential for adverse events, such as visual abnormalities, hypotension, priapism, and syncope. Use sildenafil for the treatment of erectile dysfunction with caution at reduced doses of 25 mg every 48 hours, with increased monitoring for AEs. **(Sildenafil is contraindicated in patients with pulmonary arterial hypertension, as a safe and effective dose has not been established.)**

On questioning, Russell reveals other medications

University of Liverpool. www.hep-druginteractions.org.

AbbVie Ltd. VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe NZ, version 10, May 2017.

Steroids

www.hep-druginteractions.org

	OBV/PTV/r + DSV
Beclometasone	◆
Betamethasone	■
Budesonide	■
Ciclesonide	■
Clobetasol (topical)	■
Clobetasone (topical)	◆
Dexamethasone	■
Fludrocortisone	■
Flunisolide	■
Fluticasone	■
Hydrocortisone (topical)	■
Methylprednisolone	■
Mometasone	■
Prednicarbate	◆
Prednisone	■
Triamcinolone	■

← Eumovate cream

University of Liverpool. www.hep-druginteractions.org.

Case study #5

Russell

DAA treatment	VIEKIRA=PAK for 12 weeks (no RBV)
Concomitant meds	• Reduce Zopiclone to 3.75mg nocte maximum • Switched Venlafaxine to escitalopram after discussion with psychiatrist • Switch inhaled Flixotide to Beclamethasone • Avoid Viagra and Locoid Cream until 1 week after completion of VIEKIRA PAK
Cor	
Pos follow up	ors for re-infection. • Asked to return for an HCV RNA test at 12 weeks post-treatment to check for SVR. • No further ongoing liver surveillance required.

CURED!!

Russell's HCV RNA test 12 weeks after completing treatment was negative

ALT = alanine aminotransferase; eGFR = estimated glomerular filtration rate

Case study #6

Kevin

Age	49 years
HCV genotype	1a
HCV treatment history	None – treatment-naive
Fibrosis stage	Liver stiffness 8.3 kPa. F2.

Bloods	Bilirubin	13 µmol/L
	ALT	50 IU/L
	Albumin	29 g/L
	Haemoglobin	130 g/L
	Platelets	185,000 cells/mm^3
	Prothrombin ratio	0.9
	Creatinine	214 µmol/L
	eGFR	63 mL/min/1.73 m2

Can we treat him? Any considerations?

Kevin has mild renal impairment

ALT = alanine aminotransferase; eGFR = estimated glomerular filtration rate

VIEKIRA PAK±RBV in mild renal impairment

- Any renal impairment does NOT affect VIEKIRA PAK dose
- Mild renal impairment (50-90 ml/min) ⇨REDUCE RBV dose and closely monitor for anaemia – may need to stop
- Mod/severe renal impairment (<50 ml/min)⇨AVOID RBV (refer to Hospital for treatment).

Kevin's eGFR is 63 mL/min/1.73m²

bpac^nz

Primary care Guidance:

Patients with eGFR between 50–90 mL/min/1.73 m²:

Four tablets:

- Two combined paritaprevir/ritonavir/ombitasvir tablets, each containing 75 mg/50 mg/12.5 mg
- One dasabuvir 250 mg tablet
- One ribavirin 200 mg tablet

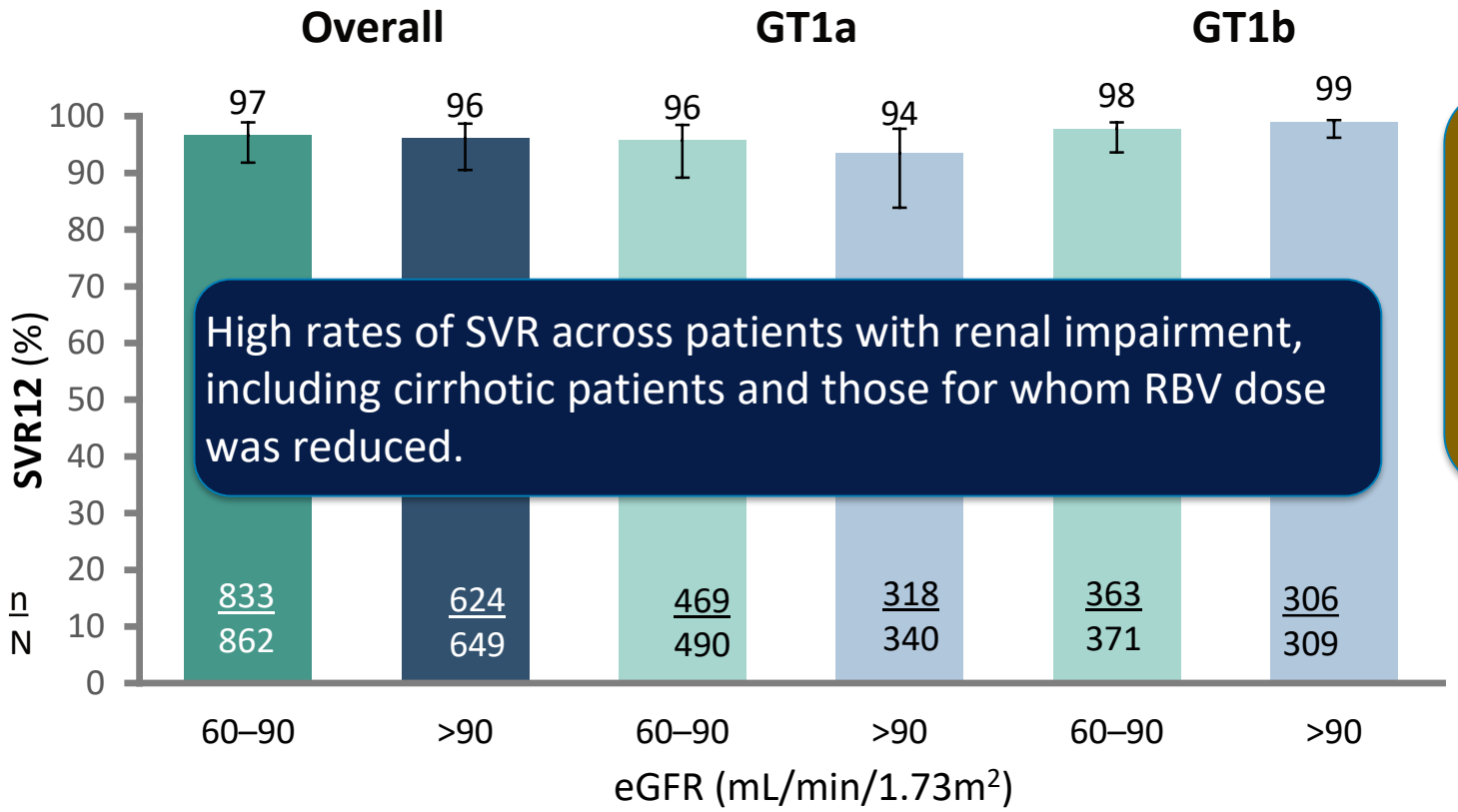
Two tablets:

- One dasabuvir 250 mg tablet
- One ribavirin 200 mg tablet

Bpac^nz Best Practice. Treatment of hepatitis C has changed. September 2016; p 22. Available at: http://www.bpac.org.nz/2016/hepc/docs/hepc.pdf

VIEKIRA PAK±RBV in mild renal impairment

Post-hoc pooled analysis of six Phase 3 trials
(N=2005 patients including 365 with compensated cirrhosis)



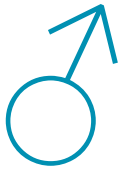
RBV doses were reduced in 7% (110/1511) of renally impaired patients who received RBV

Results of patients with baseline eGFR <60 mL/min/1.73 m^2 not presented due to small sample size (n=36).

Sulkowski MS, *et al. HEPDART* 2015; Poster Presentation.

Case study #6

Kevin



Age	49 years
HCV genotype	1a
HCV treatment history	None – treatment-naive
Fibrosis stage	Liver stiffness 8.3 kPa. F2.

Comorbidities	Hypertension Chronic Kidney Disease
Medications	Cilazapril 5 mg od Metoprolol 47.5 mg od Aspirin EC 100 mg od Furosemide 80 mg bd

What else do we need to consider?

ALT = alanine aminotransferase; eGFR = estimated glomerular filtration rate

Drug–drug interactions

www.hep-druginteractions.org

	VIEKIRA PAK	
Beta blockers		
Metoprolol	◆	No clinically significant interaction expected.
Anti-hypertensives		
Cilazapril	◆	No clinically significant interaction
Diuretics		
Furosemide	■	Potential interactions – monitor. Consider decreasing dose by up to 50%
Antiplatelet/ analgesic		
Aspirin	◆	No clinically significant interaction expected.

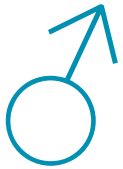
Kevin's current frusemide dose is 80 mg

University of Liverpool. www.hep-druginteractions.org.

AbbVie Ltd. VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe NZ; December 2016.

Case study #2

Kevin



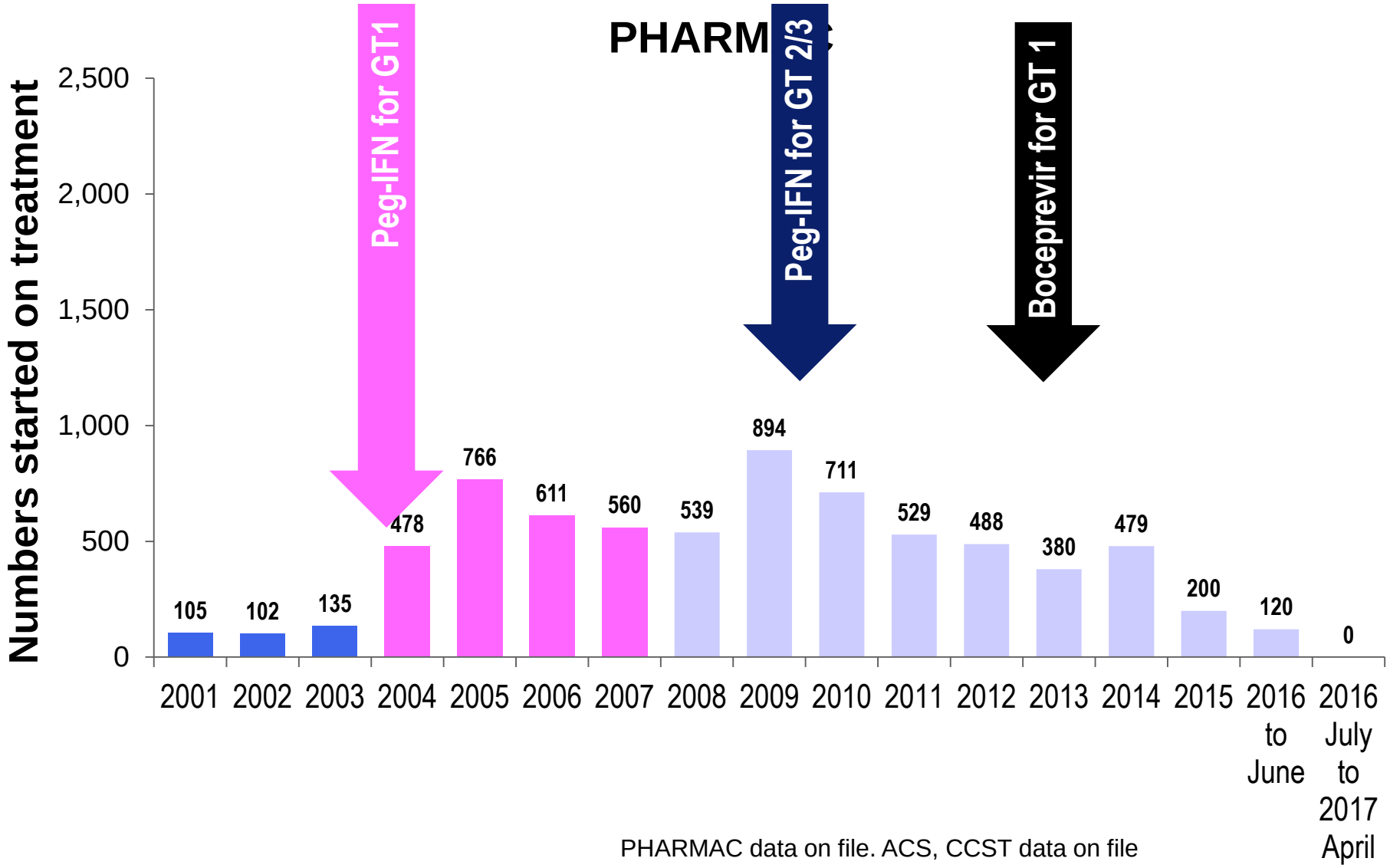
Age	49 years
HCV genotype	1a
HCV treatment history	None – treatment-naive
Fibrosis stage	Liver stiffness 8.3 kPa. F2.
Comorbidities	Hypertension
Post up	for re-infection. A test at 12 for SVR. • No further ongoing liver surveillance required.

CURED!!

Kevin's RNA test 12 weeks after the end of treatment showed no detectable HCV

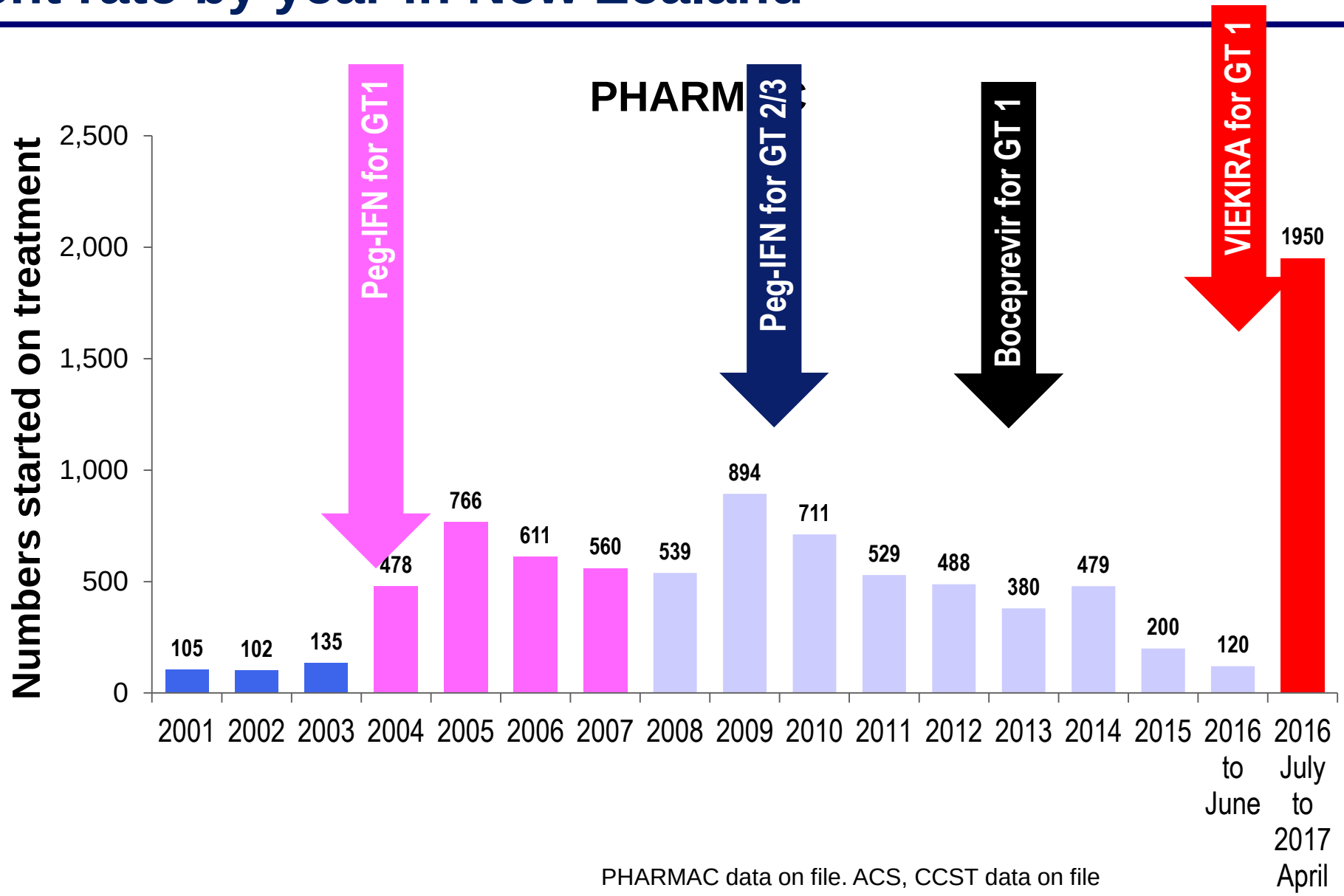
ALT = alanine aminotransferase; eGFR = estimated glomerular filtration rate

Treatment rate by year in New Zealand



PHARMAC data on file. ACS, CCST data on file

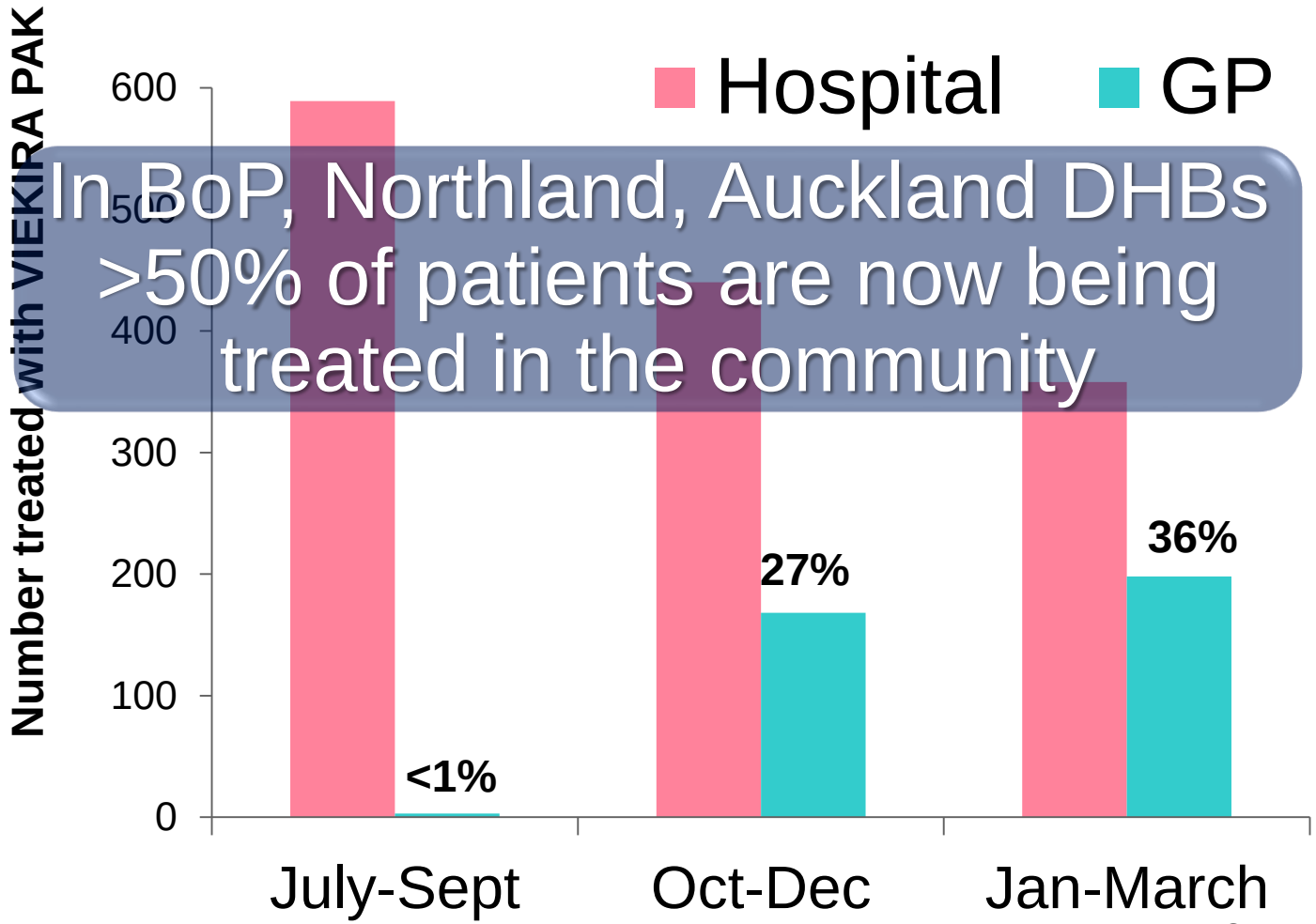
Treatment rate by year in New Zealand



PHARMAC data on file. ACS, CCST data on file

Treatment Uptake in General Practice

- Prescriber split by quarter (July 2016-March 2017)

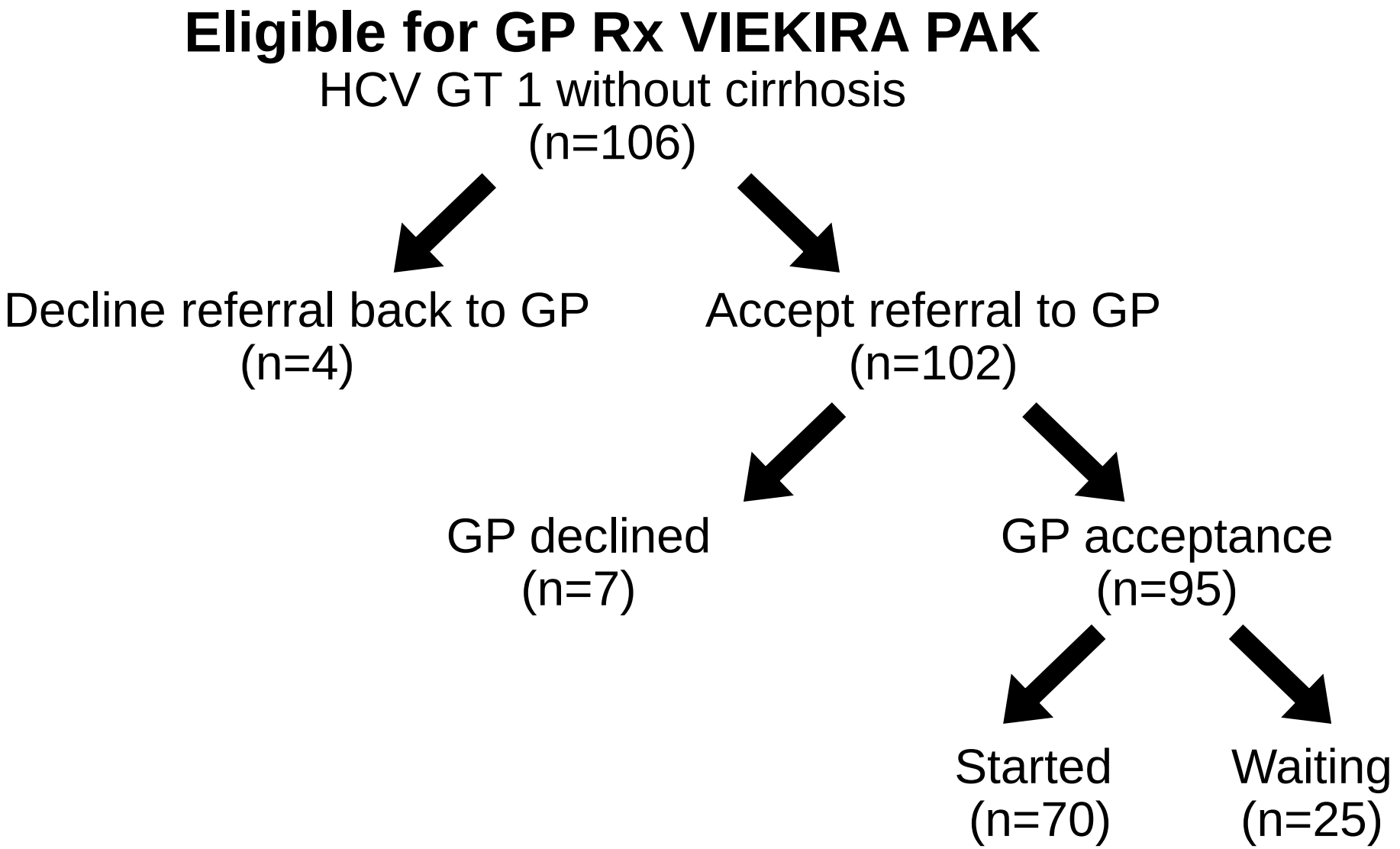


In BoP, Northland, Auckland DHBs >50% of patients are now being treated in the community

PHARMAC Data on file

All patients infected with HCV G1 should be treated by their GP UNLESS they have cirrhosis, HIV co-infection or other complex medical conditions

What do patients want in ACH Hepatitis Clinic?



Case study #6

Kathy

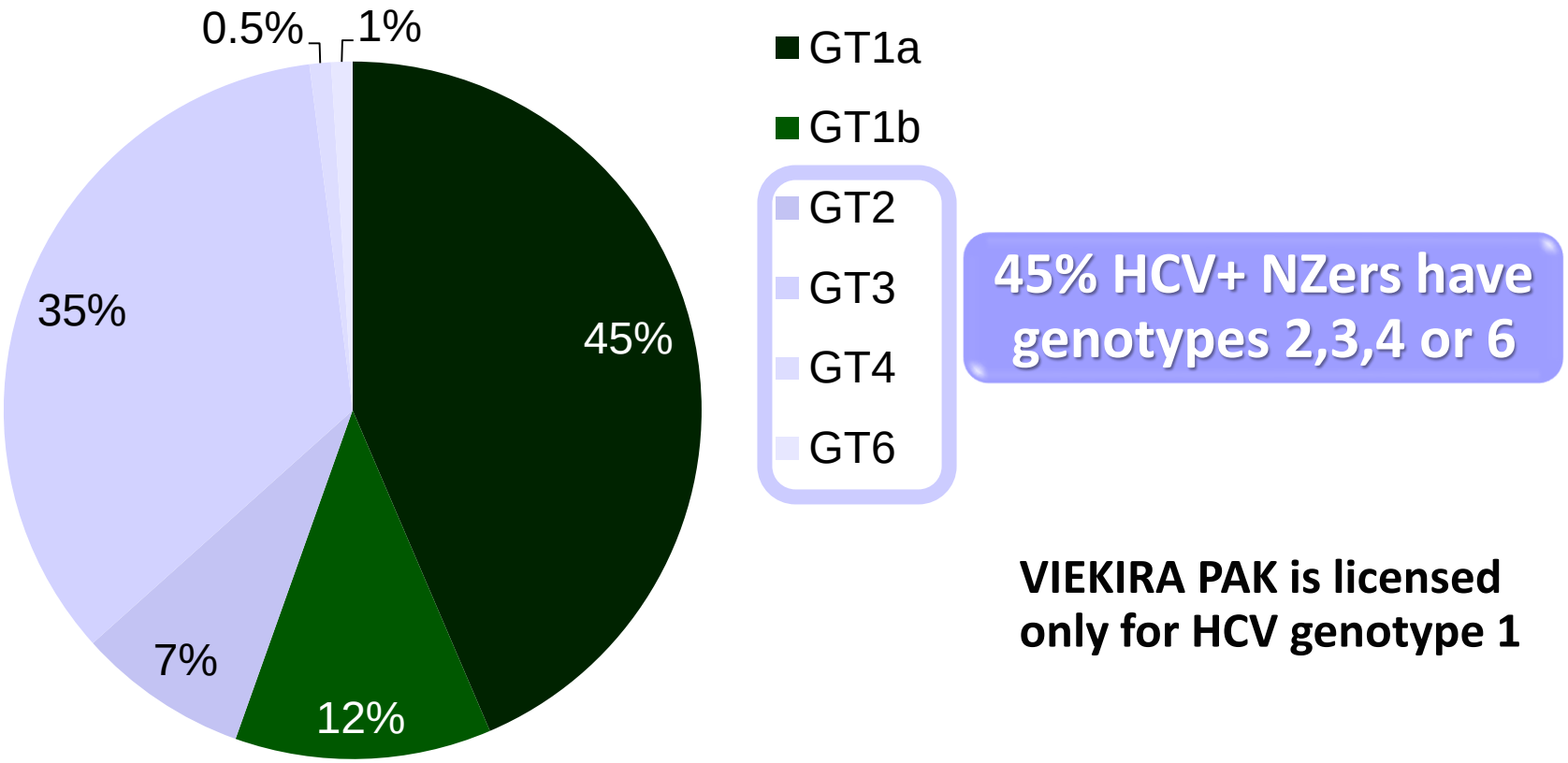
Age	50 years
HCV genotype	3a
HCV treatment history	Responder-relapser to PEG-RBV 2009
Fibrosis stage	Liver stiffness 10/5 kPa (F3)

Comorbidities	Psoriasis
Medications	Topical salicylates
Blood pressure	110/70

What treatment options are available for GT 3a?

What about patients with HCV GT 2–6?

6130 patients genotyped at LabPlus (2005–2014)



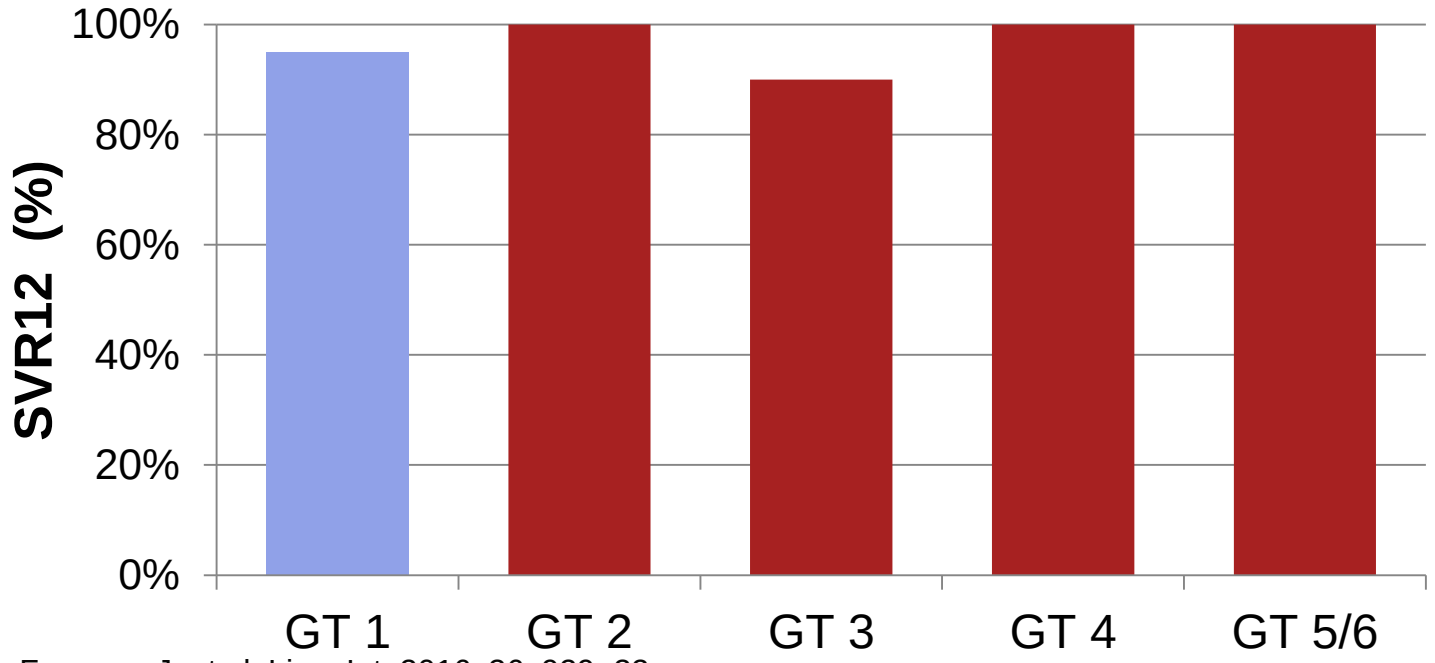
45% HCV+ NZers have genotypes 2,3,4 or 6

VIEKIRA PAK is licensed only for HCV genotype 1

Gane E, et al. *NZ Med J* 2014;127(1407):61–74
AbbVie Limited. VIEKIRA PAK and VIEKIRA PAK-RBV Data Sheets. Medsafe New Zealand; version 9: December 2016.

What about patients with HCV GT 2–6?

- Generic DAA 12 weeks supply can be imported (need prescription, Customs declaration,$2200-2500)
- Generics are as effective as brand drugs in clinical trials
  - **FixHepC Buyers club results (n=448)**

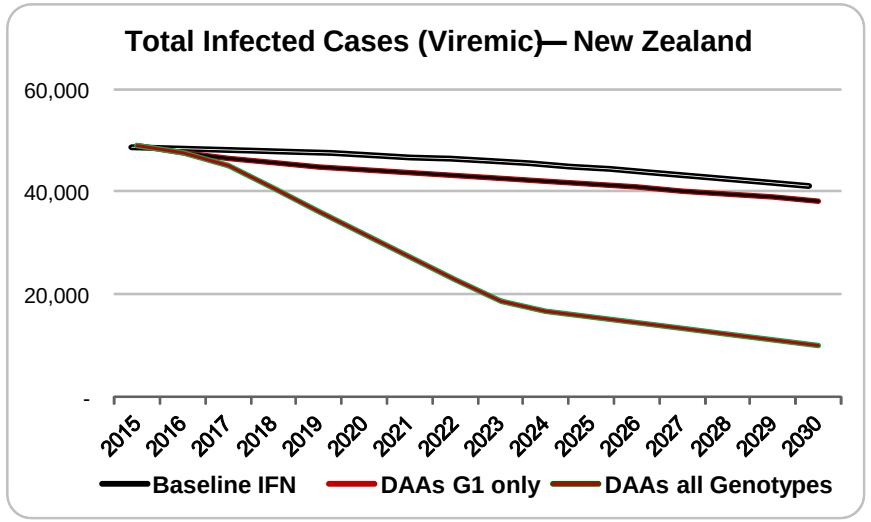


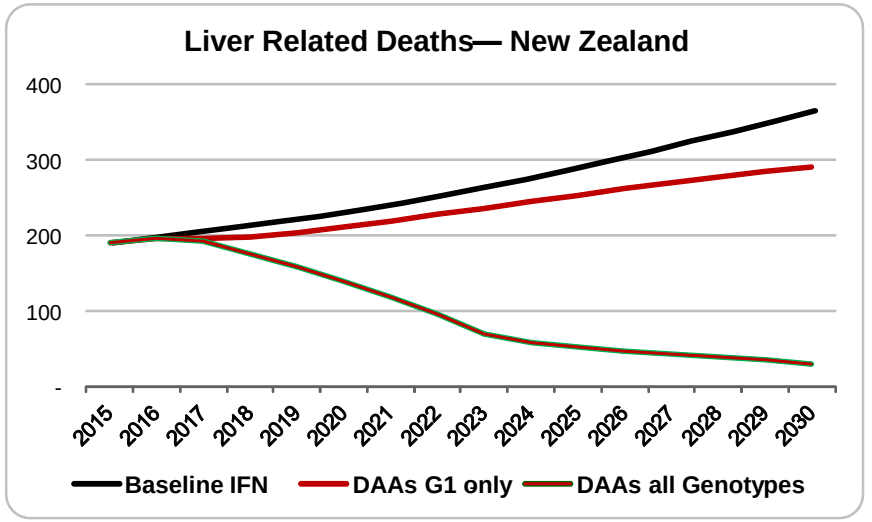
Freeman J, et al. Liver Int. 2016; 36: 929–32
Freeman J, et al. EASL 2017, Amsterdam. #PS-097

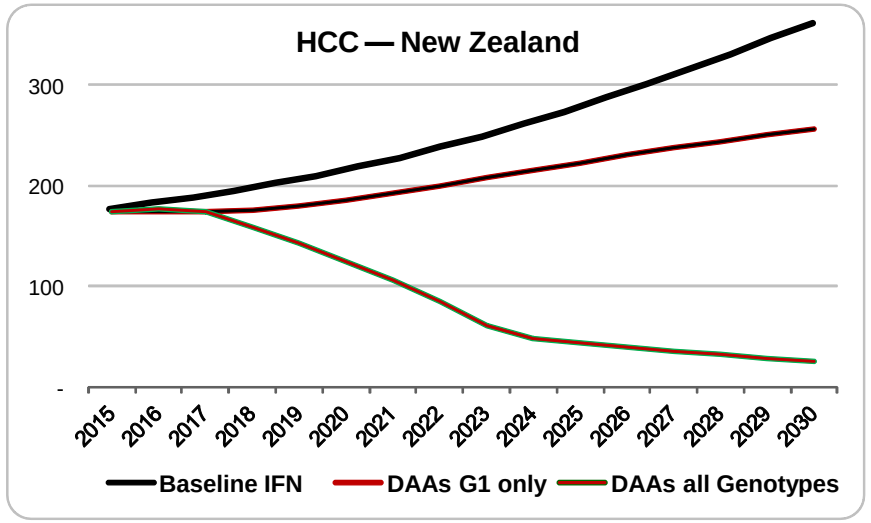
Fix HepC Buyers Club (http://fixhepc.com)

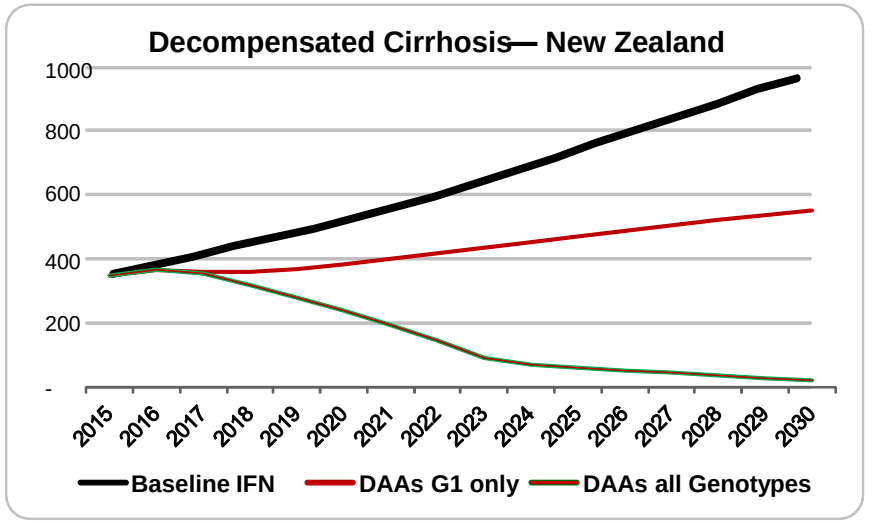
- Review guidance with the patient, available at http://fixhepc.com/new-zealand-redemption-etrials-process.html
- Create a fixhepc.com account
- Follow the checklist to be able to prescribe self-funded treatments (available with instructions above). This includes
  1. Confirm regimen (see http://fixhepc.com/hcv)
  2. GP completes Prescription for the correct regimen .
  3. GP completes the Medsafe Medications Approval Letter (http://fixhepc.com/images/forms/Medsafe-Rx-Meds-Letter.pdf)
  4. Patient/GP goes to https://fixhepc.com/r/ and completes the registration form. Also uploads scanned copies of (i) Prescription, (ii) Medsafe Medication Approval Letter; (iii) copy of passport or driver's licence passport.
  5. Patient completes the online payment by credit card
  6. Register MonkMed http://monkmed.com/redemption2,3,4
  7. Drugs arrive in 10-14 days

Eradicating only GT 1 will have limited benefit
The New Zealand Experiment





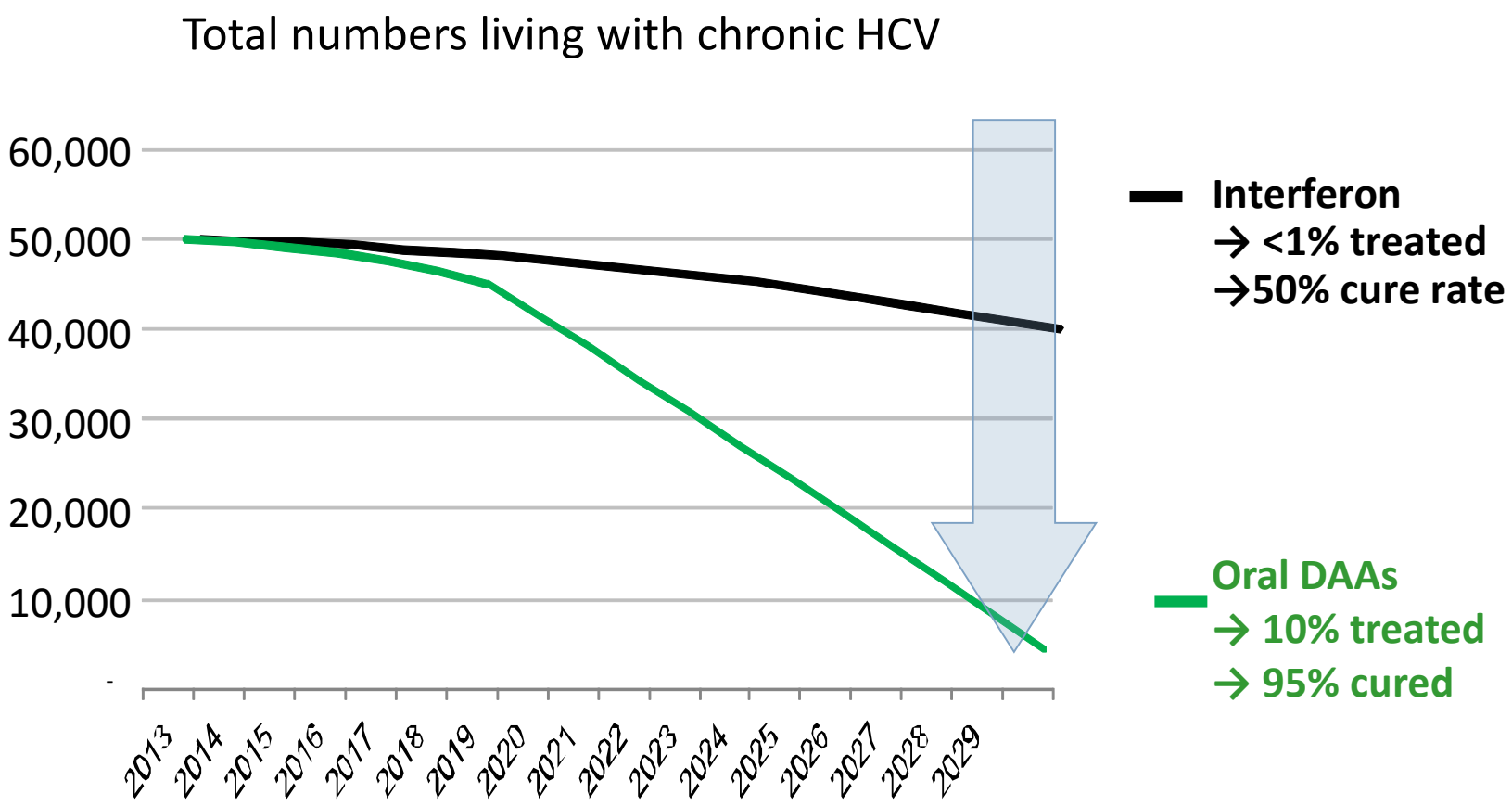




HCV Treatment – why GPs should do it

- HCV is now curable with 8 or 12 weeks tablets
- Treatment in general practice is safest
  - GPs know medical and psychosocial comorbidities
  - GPs know conmeds ⇨ avoid drug-drug interactions
- Treatment in general practice will improve uptake
  - Removes stigmatisation
  - Reduces patient costs, travel
  - Improves access in remote areas
  - Improves targeted testing and diagnosis rates

We can eliminate HCV in NZ within 20 years



Gane E, et al. *NZ Med J* 2014; 127(1407):61–74.

TO ELIMINATE HCV FROM NZ