Guy's and St Thomas'
NHS Foundation Trust

Life prolongation at what cost…..

An OPAT story

Carolyn Hemsley
Consultant – Infectious Diseases & Medical Microbiology
GSTT OPAT Lead

AO 63 year old man – presented to acute oncology 10th Nov 2021

- **PC:** 24hr history of fever, RUQ pain and bilious vomiting
- **Background**
  - Diagnosis of Adeno Ca Gallbladder July 2021
  - Came to UK to live with daughter and receive further medical care
  - Seen Oct 2021 Guys Cancer Centre disease progression local recurrence and liver mets and infiltrative disease into liver with secondary bile duct obstruction
  - ERCP 1/11 - sphincterotomy + dilation + stent insertion 5 days Cipro

Nov 2021 – positive blood cultures 10/11/22 and 11/11/22

Name: Sex: M DoB: BLOOD CULTURE Blood - culture
NB. : The only situations where blood may be drawn from vascular-More in Notepad
Request Date: 11/11/2021 15:25 Sample Date: 11/11/2021 13:18 Source: Alan Apley (AMS)

Status: Printed Report Date: 11/11/2021

1) Klebsiella pneumoniae
isolated from both bottles.

	1)
Gentamicin	R
Amoxicillin	R
Co-amoxiclav	R
Cefuroxime	R
Cotrimoxazole	(S)
Ciprofloxacin	R
Piperacillin/Taz	R
Amikacin	R
Ceftazidime	(R)
Cefpodoxime	(R)
Meropenem	R
Cefepime	(R)
Aztreonam	(R)
Tobramycin	(R)
Tigecycline	(R)
Ertapenem	(R)
Cefotaxime	(R)
Cefoxitin	(R)
Colistin	(R)

Authorised Report

Nov 2021

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Cefotaxime	(R)
Cefoxitin	(R)
Colistin	(R)

Authorised Report

NB. : The only situations where blood may be drawn from vascular-More in Notepad
Request Date: 10/11/2021 17:02 Sample Date: 10/11/2021 12:30 Source: GSTT AE Adults STH

Status: Printed Report D

Ciprofloxacin		R
Piperacillin/Taz		R
Amikacin		R
Ceftazidime		(R)
Meropenem		R
Tigecycline		(R)
Ertapenem		(R)
Aztreonam		(R)
Tobramycin		(R)
Cefepime		(R)
Cefoxitin		(R)
Cefotaxime		(R)
Kleb pneumo carb KPC		(N)
Imipenemase	IPM	(N)
New Delhi MBL	NDM	(P)
Oxacillinase	OXA48	(N)
Verona integron MBL		(N)
Temocillin		(R)
Trimethoprim		(R)
Nitrofurantoin		(R)
Cephalexin		(R)
Fosfomycin		S
Mecillinam		(R)
Colistin		R
Ceftolozane/tazobact		(R)
Cefiderocol		(R)

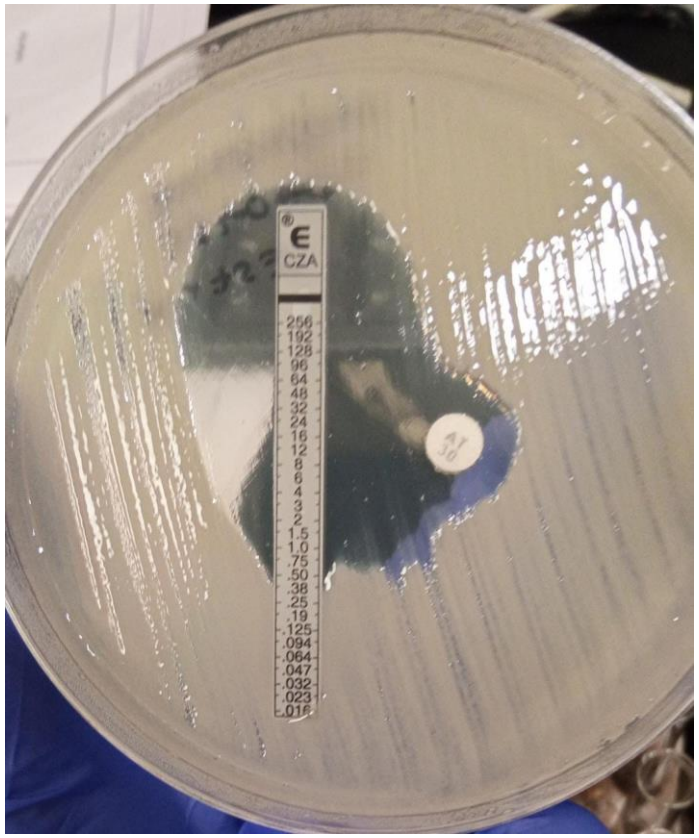
Authorised Report

Progress

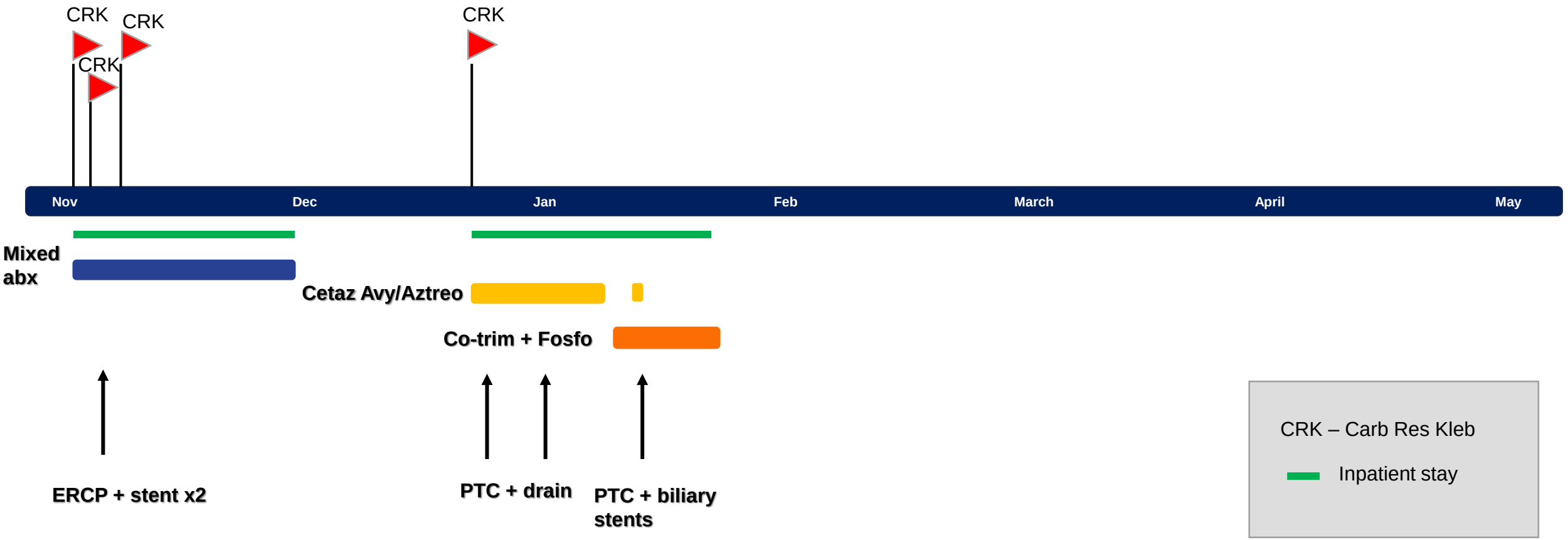
- **Intervention:**
- CT on admission consistent biliary obstruction with stent migration/blockage
- ERCP 12/11/21 and restented

- **Abx:** Cefuroxime + metronidazole + gent 10/11-12/11/21
- Cetaz/Avy + colistin 12/11/21 – 14/11/21
- Fosfomycin IV + Cotrimoxazole IV 14/11/21 – 17/11/21
- Ceftaz/Avy + aztreonam 19/11/21 – 24/11/21

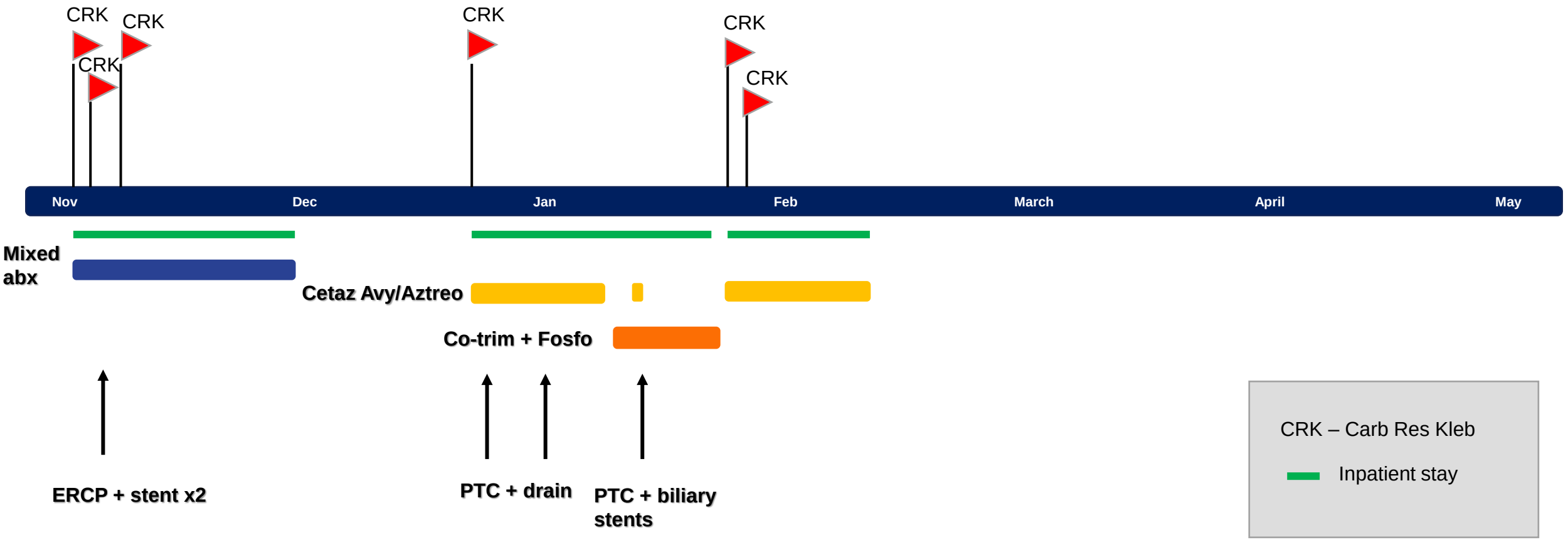
- **Abx stopped after 7 days and D/C home for oncology follow up**



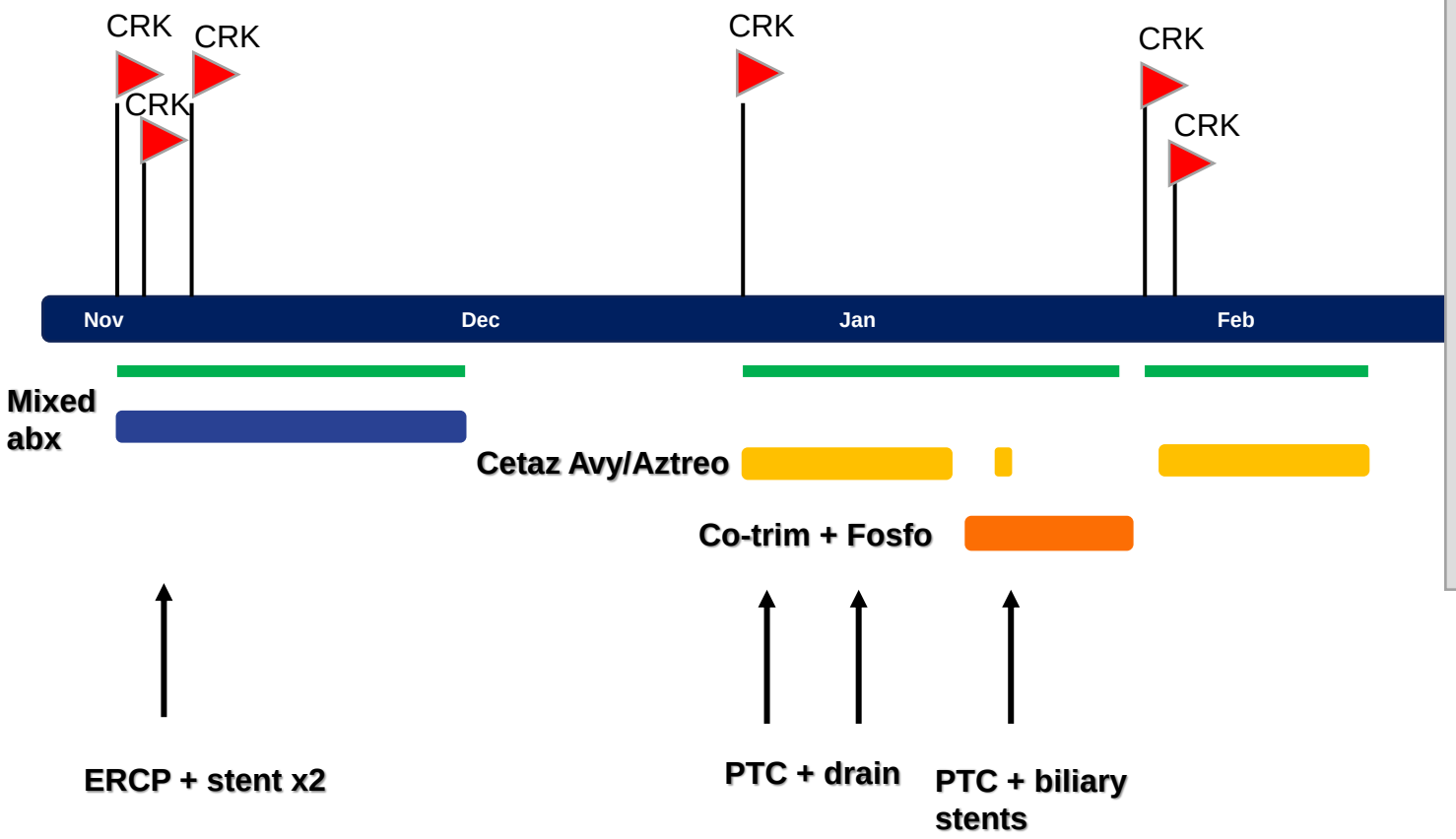
Progress – Readmission 21/12/21



Progress – Readmission 28.1.22 (within 48 hours of being home)



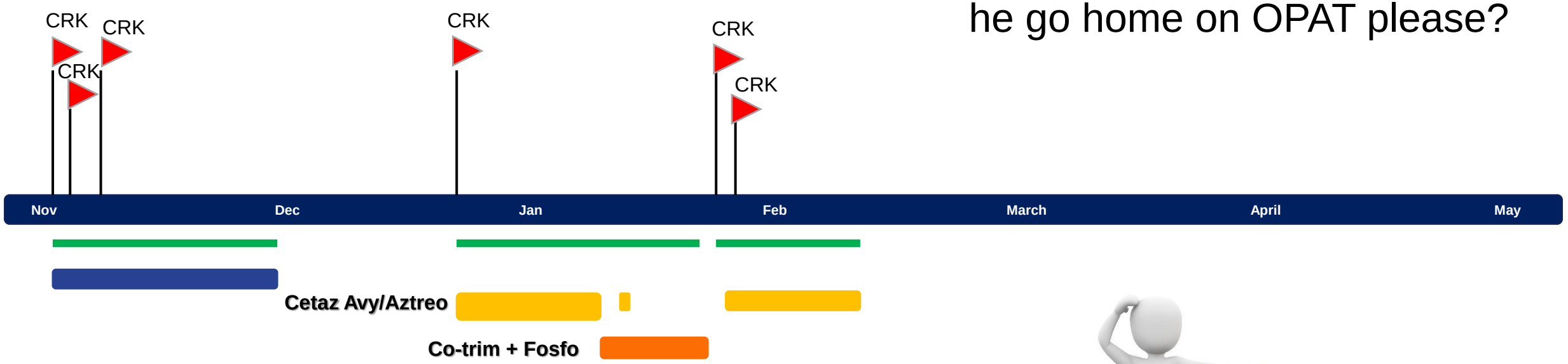
Progress – Hepatic abscesses



- **CT 29/1/22** now reported as Multiple new hypodensities within segment 4a of the liver dome with some faint peripheral enhancement, not convincingly connected to the remainder of the moderately dilated biliary tree.
- Appearances likely represent multiple small abscesses

CRK – Carb Res Kleb

Call from Ward team: Given expected long course of abx for hepatic abscesses. Can he go home on OPAT please?



- When does my father get chemo? (family)
- When does this patient go home? (oncologists)
- How do we manage family and oncologists expectations? (infection/ OPAT team)
- Is this an OPAT deliverable regimen? (infection/ OPAT team)

What does ceftaz/Avy + Aztreonam OPAT look like?

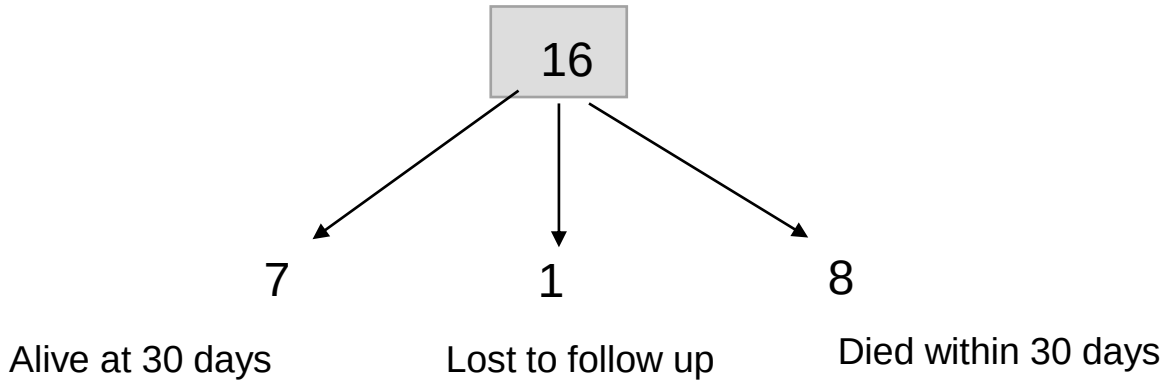
- **Ceftaz/Avy : 2g/0.5g 8 hourly**
- Manufacturer advises for *intravenous infusion* (*Zavicefta®*) give in Sodium Chloride 0.9%. Reconstitute each 2 g/0.5 g vial with 10 mL water for injections; dilute requisite dose in an appropriate infusion bag and give over 120 - 180 minutes

- **Azreonam : 1g 8 hourly**
- Manufacturer advises reconstitute Aztreonam 1g vial with 10ml of water for injection and adminster solution by slow intravenous injection over 3-5 minutes

- 6am – 8/9am 2pm -2/3pm 10 pm – midnight/1am

Expectation management - Outcomes of patient on OPAT with malignancy and biliary obstruction with abscesses (2015 – present)

- **17 patients with malignancy and biliary infection**
- **16/17 treated as for definite or probable hepatic abscesses in the setting of malignancy**
- **OPAT days: mean 16 (range 2-33)**
- **Of those with abscesses only 1/16 had any further chemotherapy.**
- **All dead by 6 months**
- **outcome @ 30 days from OPAT stop**



Palliative OPAT – various definitions

Intravenous antimicrobials @home or outside acute hospital inpatient setting until time of death or decision to stop and move to EOL care

- Patient with advanced death defining disease (eg malignancy) who develops an infection directly associated with that diagnosis. Without antimicrobials the patient would have a further reduced life expectancy. Intravenous antimicrobials is as part of life prolonging therapy.

- Patient with an infection that is incurable and needs lifelong intravenous antimicrobials as part of control rather than cure

Do this already for other guise or disease processes. Good example being palliative chemotherapy, long term oral suppressant antimicrobials

Expectation management – what is the aim here?

Problems

- Language barrier and possibly cultural differences
- Family did not want medical team to talk to their father without them present
- Family did not want to discuss death with the patient
- Daughter refusal to discuss or accept palliative care input
- Oncology attending ward consultant changes weekly – constant revisiting of chemo plans. ‘Once the infection has gone we can give chemo’. Resulting in obsession about chemo from daughter

Finance – sign off was the biggest barrier to discharge in terms of delay in getting this man home

Problem Finance – biggest barrier to discharge

- **CEFTAZ/AVI = £308.52 per day**
- **AZTREO = £33.84 per day**

Cost per week = £2 396.52

OPTIONS

1. Stop abx and discharge home
2. Stay on abx in hospital
3. Stay on abx at home (OPAT)

- **AGREED with Oncology clinical director that could not remove antimicrobials as would result in death**
- **OPAT more efficient use of resource than inpatient stay**
- **OPAT Could only be delivered if family could take on administration**
- **AGREED with family complete the 6 weeks course and stop -> £14 380**

- **AGREED with Oncology clinical director that could not remove antimicrobials as would result in death**

- **OPAT more efficient use of resource than inpatient stay**

- Gemcitabine and Cisplatin is given as day 1 and day 8 every 21 days up to 8 cycles (total 6 months).

- £5,824 for all 8 cycles

Progress – Readmission 12 days later

CRK CRK CRK CRK CRK CRK VRE

Nov | Dec | Jan | Feb | March | April | May

Mixed abx

Cetaz Avy/Aztreo

Co-trim

Cetaz Avy/Aztreo **OPAT**

Linezolid

ERCP + stent x2

PTC + drain

PTC + biliary stents

Home for 12 days

Progress – Readmission within 48 hours

CRK CRK CRK CRK CRK CRK VRE VRE CRK

Nov | Dec | Jan | Feb | March | April | May

Mixed abx

Cetaz Avy/Aztreo

Co-trim

Cetaz Avy/Aztreo **OPAT**

Linezolid

ERCP + stent x2

PTC + drain

PTC + biliary stents

Home for 12 days

CT/ERCP/CT/ERCP : persisting left lobe intrahepatic duct dilatation, persisting mets/abscesses

showing we care

Expectation management – Surely we now agree that this is palliative OPAT?

My view and agenda

- Incurable infection
- Will never get to chemotherapy
- Antibiotics keeping him alive
- Need a long-term manageable regimen
- Quality of life for as long as possible
- Patient where he wants to be
- Well managed death

Family agenda

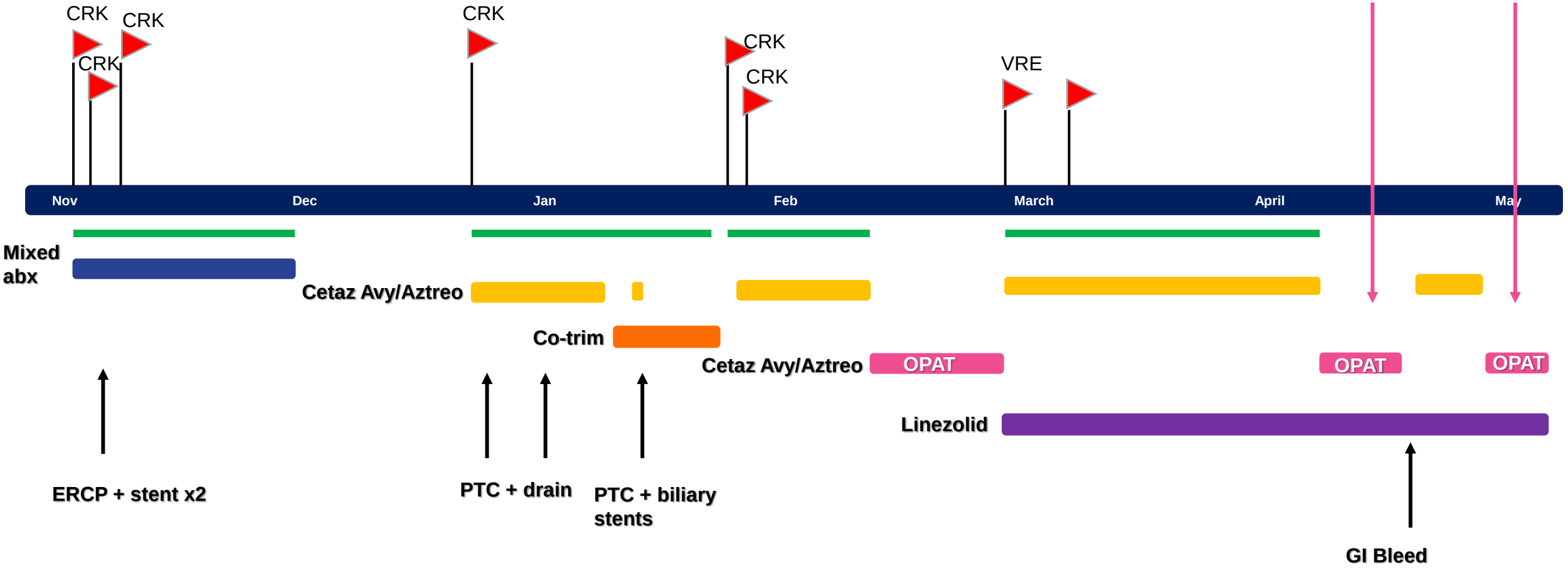
- Keep him alive
- Get him to chemo

Oncology agenda

- Not sure
- Get him to chemo?
- Prolong his life?
- Well managed death

Progress and home again

12 hourly dosing ceftaz/Ay + aztreonem



Not an ideally managed death

- **27/4/22 and 4/5/22 –** patient didn't come to clinic. Daughter collected medications

- **6/5/22 –** daughter called ward, oncology, PALS.
  - Distressed
  - PICC line blocked.
  - She needed someone to come to the house and resite IV access urgently

- **OPAT team co-ordinated with GP, Oncology and community palliative care**
- **Patient Died 8/5/22**

Was this a success or failure?

- **What went well?**
  - Prolonged his life with some good quality of life
  - Time to accept the diagnosis and outcome
  - Got patient home to family
  - Died at home
- **What could have been done better?**
  - Communication and one voice from both infection and oncology (Don’t give false hope)
  - Avoidable delay in discharge
  - In the end non ideally managed death.

Lesson learnt

This is palliative OPAT

Should have planned for all common scenarios and discussed the end before it happened

- Patient and family
- ID pharmacy
- OPAT nurses
- Oncology and palliative colleagues
- IV line team
- Drugs & therapeutics committee
- GP