CLINICAL MEET:

Hidden cause of Post transplant Anaemia

PRESENTOR : DR AYISHA ZAINAB

UNDER GUIDANCE :

DR VARAPRASAD RAO K (Head of department)

DR SIREESHA G (Associate professor)

DR VISWANATH M (Associate professor)

DEPARTMENT OF NEPHROLOGY

CASE 1

- 30 yrs old male ;

  K/C/O **CKD on maintenance haemodialysis since** 2023 (2 months)

- Native kidney disease : **Chronic GN - HTN**

- Underwent **Live related renal transplantation** : April 2023 (Donor- Father)

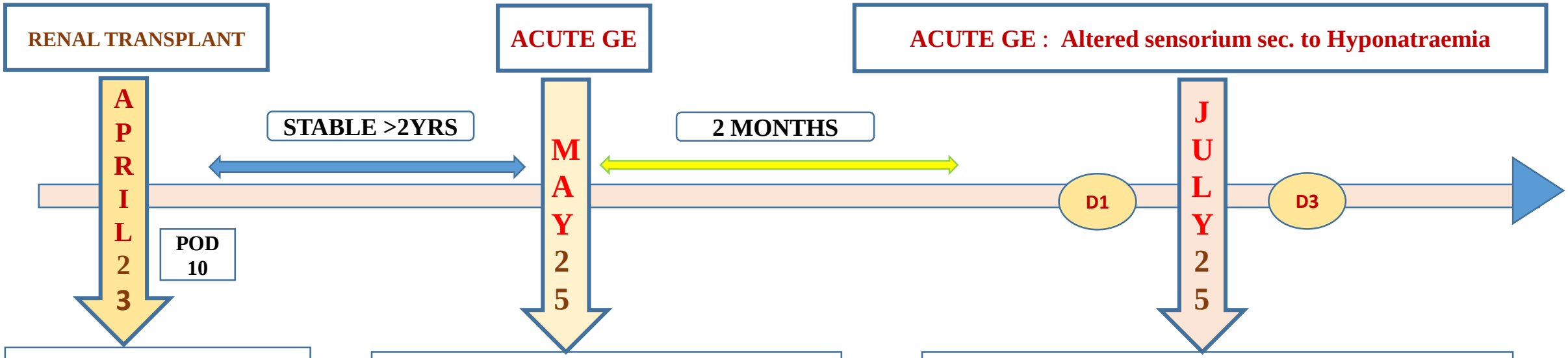
  - Post Op : Uneventful

    POD10 : Discharge

    Urea : 31

    Creatinine 1.1

    Triple immunosuppressants (Omnacortil , Tacorite , Mycorite) , Bactrim ds



Hb	10.8
WBC	8200
Platelet	2.1
Creat	**1.1**

Hb	12.8	→	12.7
WBC	7900	→	7600
Platelet	1.7	→	2.2
Creat	**3**	→	**1.9** ↓

Hb	11.1	→	11.4
WBC	7000	→	**3550**
Platelet	**1.6**	→	**0.95**
Creat	**3.2**	→	**3.9**
Na/K+	**96** /3.7	→	116/3.5

CMV	Negative
Stool evaluation	Normal
Immunosuppression:	Adjusted
Antibiotic:	Oflox , Metrogyl , Nizonide

CMV	Negative
Graft kidney USG /Doppler	Normal
Stool :	Oocysts of Cryptosporidium [D3]
Immunosuppression	Adjusted
Antibiotic :	Nitazoxanide & Azithromycin

	D5	D7	D 9	D11	D12	D15	D16	D17
HB	11.4	11.1	11.4	11.2	10.9	9.9	9.8	9.9
WBC	3740	4600	3850	2600	13,800	10,220	8970	3900
PLATELET	1.15	1.5	1	0.75	0.50	0.37	0.31	0.46
BUN	38	32	32	66	73	84	77	72
CREAT	3.8	3.8	4	4.6	4.6	4.1	3.8	3.5
SODIUM	122	130	135	131	130	130	131	135

COLONOSCOPY: N

FILGASTRIN

1 SDP

FILGASTRIN

Blood / Urine culture - NG

IMMUNOSUPPRESSANTS ADJUSTED ACCORDINGLY

VIRAL PANEL SENT

TEST REPORT

Reg. No	: NGM-74388	**Patient ID**	: 74388	**Scan to Validate**
Name	: [redacted]	**Reg.Date**	: 24/07/2025 01:51 PM	
Age/Sex	: 30 years/Male	**Collection**	: 24/07/2025 01:51 PM	
Referred By	: DIRECT	**Received**	: 24/07/2025 02:09 PM	
Referral Dr	: Dr. [redacted]	**Report**	: 24/07/2025 06:05 PM	
Location	:	**Barcode**	: 252050302	

Test Description	**Result(s)**

Transplant Viral Panel.

Human Parvo virus B19	**Detected**
Epstein- Barr virus	Not Detected
Varicella Zoster virus	Not Detected
Herpes simplex virus 1	Not Detected
Herpes simplex virus 2	Not Detected
BK virus	Not Detected
Cytomegalovirus	Not Detected

Clinical Significance

An RT-PCR (Reverse Transcription Polymerase Chain Reaction) based transplant panel is used in the context of organ transplantation to detect viral infections that could affect the transplanted organ and the recipient's health.

This kind of panel is important for monitoring and managing potential viral infections that can complicate transplantation. Here's a brief overview of each virus included in your panel:

Human Parvovirus B19: Can cause anemia, especially in immunocompromised individuals. In transplant patients, it might lead to more severe complications.

Epstein-Barr Virus (EBV): Known for causing mononucleosis and is associated with post-transplant lymphoproliferative disorder (PTLD). Monitoring EBV is crucial in transplant patients.

Varicella-Zoster Virus (VZV): Causes chickenpox and shingles. Transplant patients are at risk for severe VZV infections.

Herpes Simplex Virus 1 (HSV-1): Can cause oral and sometimes systemic infections. In immunocompromised patients, it can be more severe.

Herpes Simplex Virus 2 (HSV-2): Typically associated with genital herpes but can also cause systemic infections in transplant patients.

	D18	D20	D21	D22	D23	D 25	D26	D29	D31	D33	D34
HB	**9.1**	**9.2**	9.4	8.8	7.8	6.8	6.5	5.9	6.3	6	6
WBC	**5300**	**3160**	2800	3500	2220	530	330	540	1600	4180	5750
PLATELET	**0.80**	**0.45**	0.30	0.65	0.45	0.08	0.50	0.40	0.50	0.60	1
BUN	**56**	**60**	70	76	76	78	76	78	80	77	66
CREAT	**3.3**	**3.4**	3.5	3.2	3.2	2.8	2.8	2.8	2.7	3.8	2.7
SODIUM	**143**	**138**	136	130	130	135	131	135	132	131	132

IVIG 10gm

SDP FILGASTRIN

BM ASP : HYPOCELLULAR

BM Bx : PARVOVIRUS

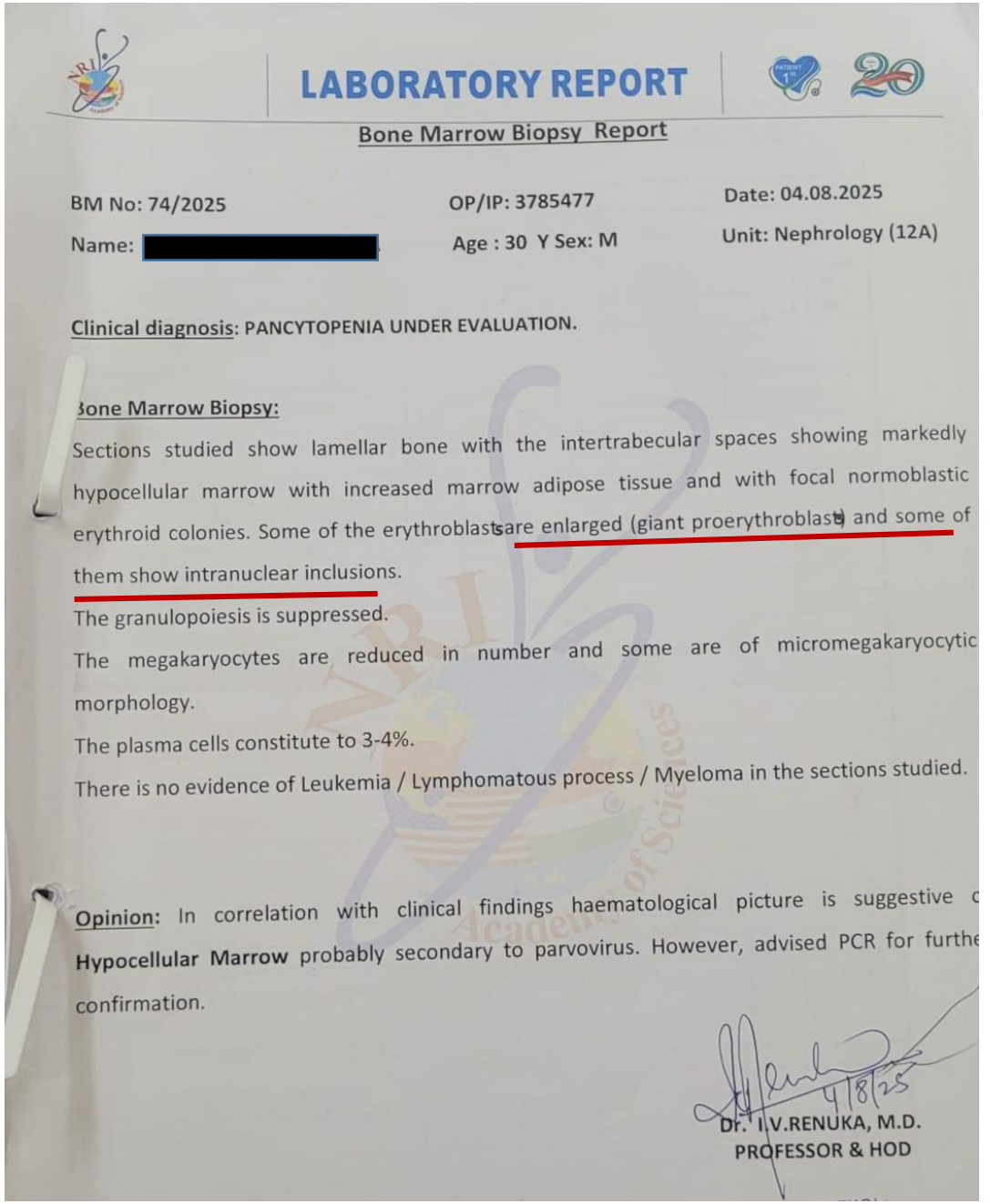
PARVOVIRUS

SDP FILGASTRIN

D26 --- D34 : Daily IVIG 10gm

FILGASTRIN 5 DOSES

BONE MARROW



LABORATORY REPORT

Bone Marrow Biopsy Report

BM No: 74/2025 OP/IP: 3785477 Date: 04.08.2025

Name: [redacted] Age : 30 Y Sex: M Unit: Nephrology (12A)

Clinical diagnosis: PANCYTOPENIA UNDER EVALUATION.

Bone Marrow Biopsy:

Sections studied show lamellar bone with the intertrabecular spaces showing markedly hypocellular marrow with increased marrow adipose tissue and with focal normoblastic erythroid colonies. Some of the erythroblasts are enlarged (giant proerythroblasts) and some of them show intranuclear inclusions.

The granulopoiesis is suppressed.

The megakaryocytes are reduced in number and some are of micromegakaryocytic morphology.

The plasma cells constitute to 3-4%.

There is no evidence of Leukemia / Lymphomatous process / Myeloma in the sections studied.

Opinion: In correlation with clinical findings haematological picture is suggestive o **Hypocellular Marrow** probably secondary to parvovirus. However, advised PCR for furthe confirmation.

4/8/25

Dr. I.V.RENUKA, M.D.
PROFESSOR & HOD

FOLLOW UP

	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY'26
HB	10.3	10.9	10	9.5	9.1
WBC	5930	3600	9200	8820	6500
PLATELET	1.5	1.5	1.5	1.8	2.1
BUN	66	54	63	63	50
CREAT	2.8	2.4	2.5	2.8	2.6

Parvo B19 DNA Viral load < 100 [Not quantifiable]

CASE 2

- 27 yrs old female ,

  K/C/O **CKD on medical Mx**

- Native kidney disease : **Primary VUR – Grade 2**

- Underwent **Live unrelated renal transplantation** : Sept 2022 (Donor - cousin brother – 2/6 match)

  - Induction given with ATG 50mg (2 vials)

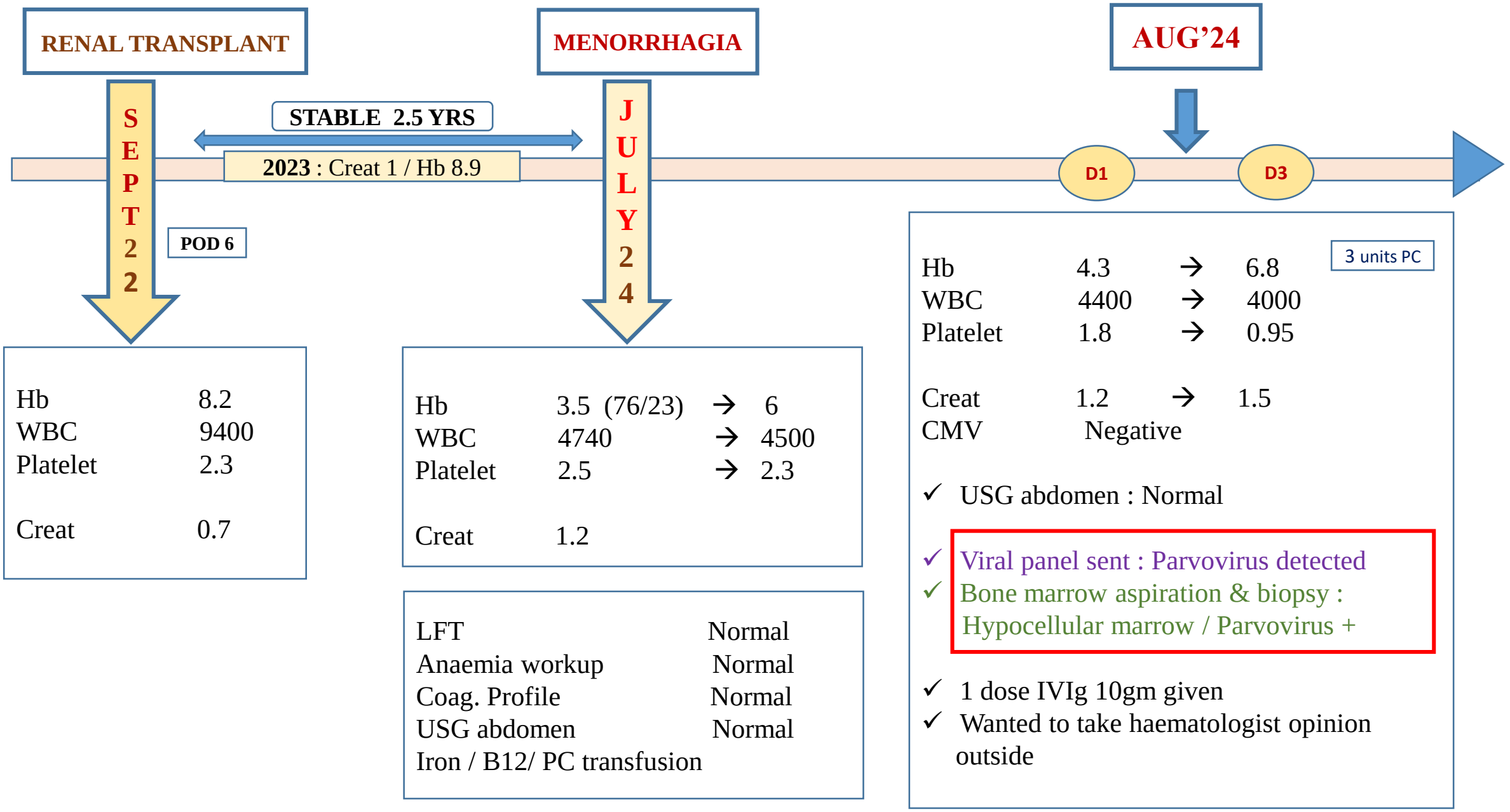
  - Post Op : Uneventful

    POD 6 : Discharge

    Urea : 30

    Creatinine 0.7

    Triple immunosuppressants (Omnacortil , Tacorite , Mycorite) , Bactrim ds , cmvcel


RENAL TRANSPLANT
SEPT'22
POD 6
STABLE 2.5 YRS
2023 : Creat 1 / Hb 8.9
MENORRHAGIA
JULY'24
AUG'24
D1
D3
Hb 8.2
WBC 9400
Platelet 2.3
Creat 0.7
Hb 3.5 (76/23) → 6
WBC 4740 → 4500
Platelet 2.5 → 2.3
Creat 1.2
LFT Normal
Anaemia workup Normal
Coag. Profile Normal
USG abdomen Normal
Iron / B12/ PC transfusion
3 units PC
Hb 4.3 → 6.8
WBC 4400 → 4000
Platelet 1.8 → 0.95
Creat 1.2 → 1.5
CMV Negative
✓ USG abdomen : Normal
✓ Viral panel sent : Parvovirus detected
✓ Bone marrow aspiration & biopsy : Hypocellular marrow / Parvovirus +
✓ 1 dose IVIg 10gm given
✓ Wanted to take haematologist opinion outside

- She was given Iron injections , EPO , Desidustat , blood transfusions & IVIg dose 10gm (oct) one dose (5 months) , despite which their was no constant improvement → Referred to higher center
- NIMS (Feb'25) : Hb 6.3 / 4000 / 0.95 ; **Parvo B19 DNA viral load > Detectable**

  Iron injections , Blood transfusion given → no significant improvement

  IVIg was initiated (D1 50gm f/b 5gm every month till date)

  Haematological parameters were monitored

  Immunosuppressants were titrated accordingly

FOLLOW UP

MONTH	Hb (gm/dl)
FEBRUARY	6.3
MARCH	6.6
APRIL	9.2
MAY	10.3
JUNE	11.4
JULY	12.1
AUGUST	11
SEPTEMBER	12.1
OCTOBER	11.7
NOVEMBER	11.4
DECEMBER	11.6
JANUARY	11.5

PARVO B19 VIRAL DNA LOAD	IU/ML
FEBRUARY	> Detectable levels
MAY	3,27,601 . 93
SEPTEMBER	28,679. 15
DECEMBER	10,158. 50

WBC : 9900 , PLATELET 3.14 , RFT : BUN 34 / CREATININE 1

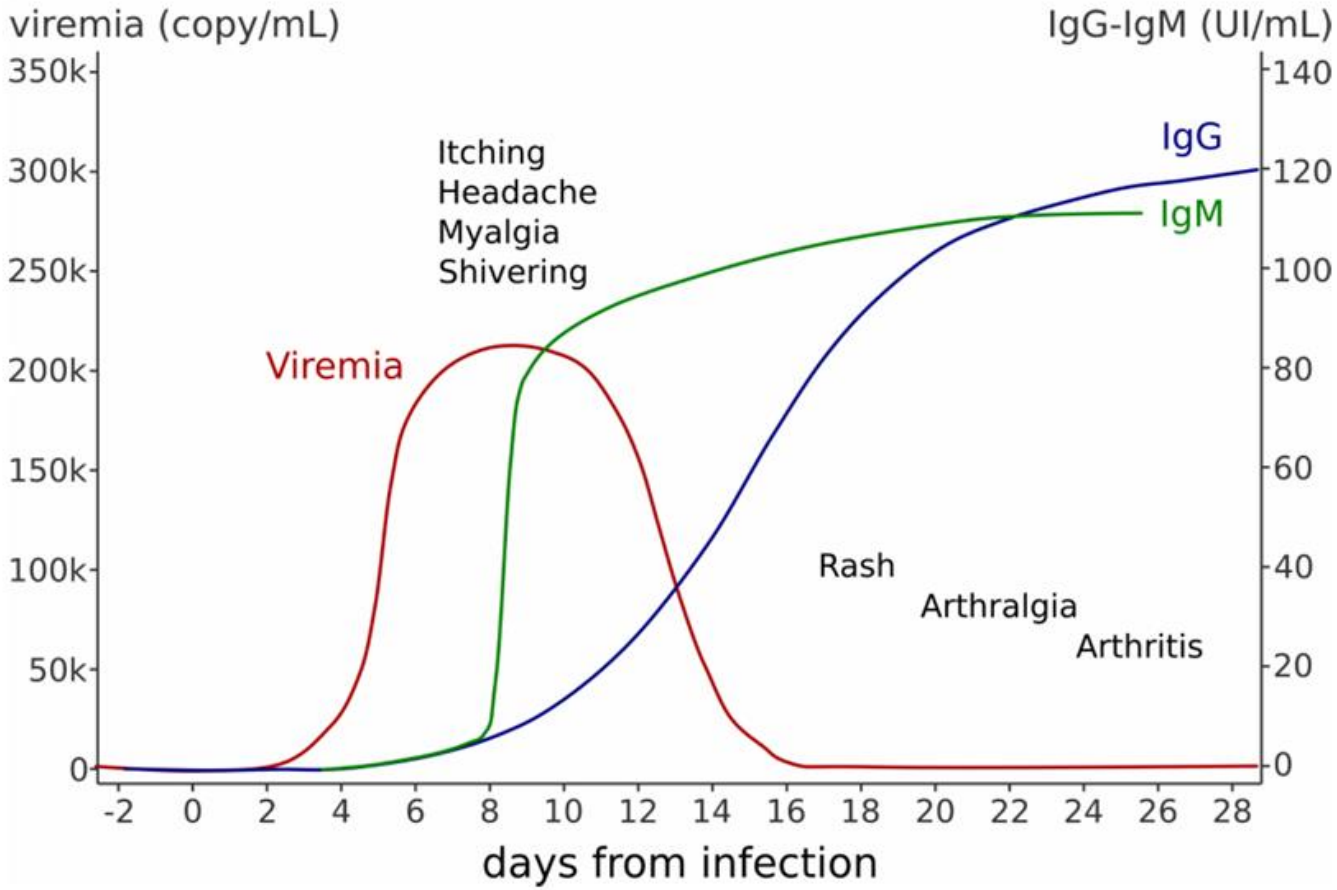
PARVOVIRUS B19

- ✓ Small , non-enveloped **ssDNA virus** of the erythroparvovirus genus & parvoviridae family
- ✓ Ubiquitous
- ✓ More common in Children > adults
- ✓ Occurs in **23%** of renal transplant recipients
- ✓ Characteristic tropism to infect **red blood cell and their precursor** [P blood group antigen]
- ✓ **Transmission** :

  Respiratory route / Vertically : mother to child / Hematogenous

- ✓ Only known host for parvovirus B19 is **humans**
- ✓ **Incubation period :** 4 to 14 day

Trend of Viremia, IgM, IgG, and Symptom Onset

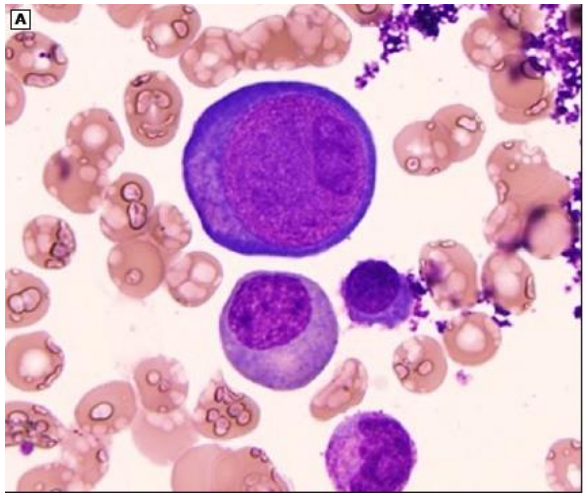


CLINICAL MANIFESTATIONS

- Non specific prodromal symptoms : Fever , headache , nausea , diarrhea
- Arthropathy
- Erythema Infectiosum (5th disease) : Erythematous malar rash f/b lacy rash over the trunk & extremities
- Transient aplastic crisis in those with chronic hemolytic disorders
- Pure Red blood cell Aplasia
- Fetal infection : Nonimmune hydrops fetalis , Intrauterine fetal death , miscarriage
- Organ invasive : Hepatitis , carditis , pneumonitis, encephalitis
- Graft dysfunction or loss

DIAGNOSE ?

- ✓ Clinical suspicion
- ✓ Haematological parameters
- ✓ Parvovirus B19 - specific IgM & IgG antibodies
- ✓ Parvovirus B19 DNA



- ✓ Bone marrow aspiration & biopsy : Giant pronormoblasts with viral inclusions

TREATMENT

IMMUNOCOMPETENT

MANIFESTATION	TREATMENT OPTIONS
Erythema infectiosum	None / Symptomatic
Arthritis or Arthralgia	NSAID’s
Transient Aplastic crisis	Transfusions & oxygen if needed
Fetal Hydrops	?Intrauterine blood transfusions
Chronic infection with anaemia	IVIG & Transfusions
Chronic infection without anaemia	?IVIG

IMMUNOCOMPROMISED

- ✓ Reduction of Immunosuppression
- ✓ Intravenous immunoglobulin (IVIG)
  - High-dose IVIG (0.5 gm/kg/day for 5 - 10 days) (or)
  - 400 mg/kg/day for 5 consecutive days (or)
  - Shorter courses (2–4 days) with higher daily doses till total dose is 2 g/kg

Ongoing studies :

- ✓ Foscarnet 6 g/day for 5 to 14 consecutive days
- ✓ Cidofovir & hydroxyurea

Clinical response : **Serial hemoglobin measurements**; **PCR** may be considered if anemia recurs
(Routine PCR monitoring is **not recommended)**

THANK YOU