

HELLP SYNDROME: A CASE REPORT AND MANAGEMENT

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DEFINITION

It is a syndrome resulting from microvascular endothelial activation and cell injury characterised by hemolysis, elevated liver enzymes and low platelet count.

RISK FACTORS

- **Maternal age older than 34 years**
- **Multiparity**
- **White race or European descent**
- **History of poor pregnancy outcome**

CLASSIFICATION

TENNESSEE CLASSIFICATION

Based on laboratory criteria

1. Platelet count $\leq 100 \times 10^9/L$
2. AST ≥ 70 IU/L & LDH ≥ 600 IU/L
3. Hemolysis on peripheral smear

Partial HELLP



Any 2 of 3 criteria

Full HELLP



All of 3 criteria

MISSISSIPPI CLASSIFICATION

Class

1

**Platelets $\leq 50 \cdot 10^9/L$
AST or ALT ≥ 70 IU/L
LDH ≥ 600 IU/L**

2

**Platelets $\leq 100 \cdot 10^9/L \geq 50 \cdot 10^9/L$
AST or ALT ≥ 70 IU/L
LDH ≥ 600 IU/L**

3

**Platelets $\leq 150 \cdot 10^9/L \geq 100 \cdot 10^9/L$
AST or ALT ≥ 40 IU/L
LDH ≥ 600 IU/L**

CASE REPORT

A 32-year-old primipara, gravida III, was admitted to the hospital at 34-35 weeks of gestation. She presented with

- Nausea & vomiting**
- abdominal pains for 3 hours**
- edema for 1 month**

The two previous pregnancies ended with spontaneous abortion.

Vaginal examination revealed

- cervix opening of 2 cm
- hemorrhage from vagina and
- Cephalic (head) presentation

BP=120/80 mmHg

Initial Laboratory data:

- Hb = 85g/l,
- Ht=0,26
- RBC to $2,88 \times 10^{12}/L$,
- Leucocyte up to $9,9 \times 10^9/L$
- Proteinuria - 8,5 g/L

- **Urgent caesarean section was performed with the delivery of a still male fetus at 34-35 weeks of gestation, BW=2200g and L=48 cm.**
- **complete placenta abruption with evacuation of 500 ml of blood from the uterus.**
- **On examination of the uterus two apoplectic regions 2 cm in diameter were found. Curettage of the uterus was performed.**
- **Total intra-operative blood loss = 1000 ml.**

1st post-operative day lab data (district hospital)

Parameter	Value in patient	Normal range
Hemoglobin	57g/l	120-140g/l
Leucocytes	18x10 ⁹ /l	4,0-9,0x10 ⁹ /l
Neutrophiles	82%	47-72%
Platelets	86x10 ⁹ /l	180-320x10 ⁹ /l
ALT	5,4 mmol/l/h	0,1-0,68 mmol/l/h
AST	3,3 mmol/l/h	0,1-0,45 mmol/l/h

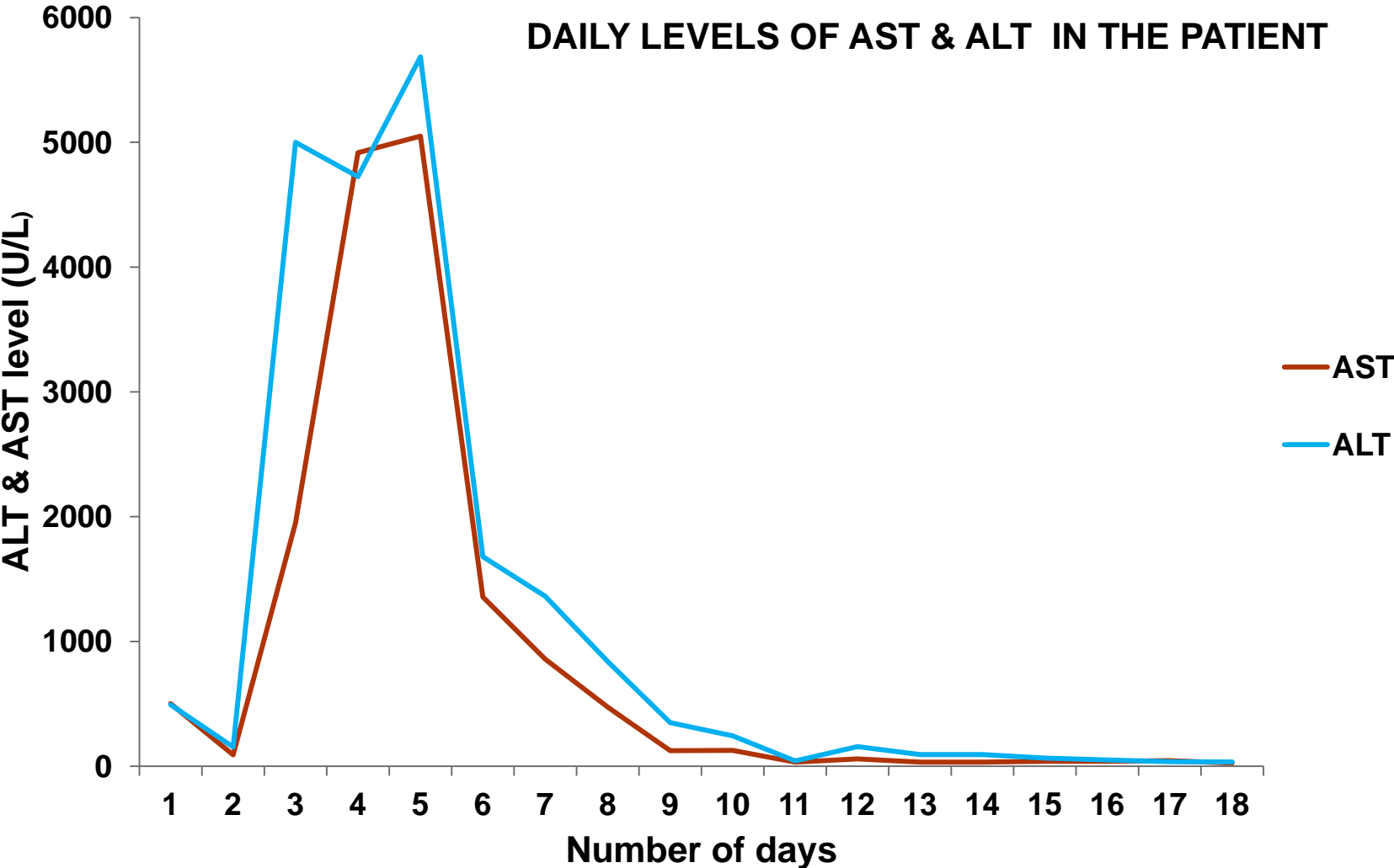
The patient was transported to Regional hospital in critical condition:

- medical sedation
- artificial ventilation
- BP- 180/100 mmHg
- Pulse rate – 98/min
- CVP – 18 cm H₂O
- Anasarca
- Nasal bleeding

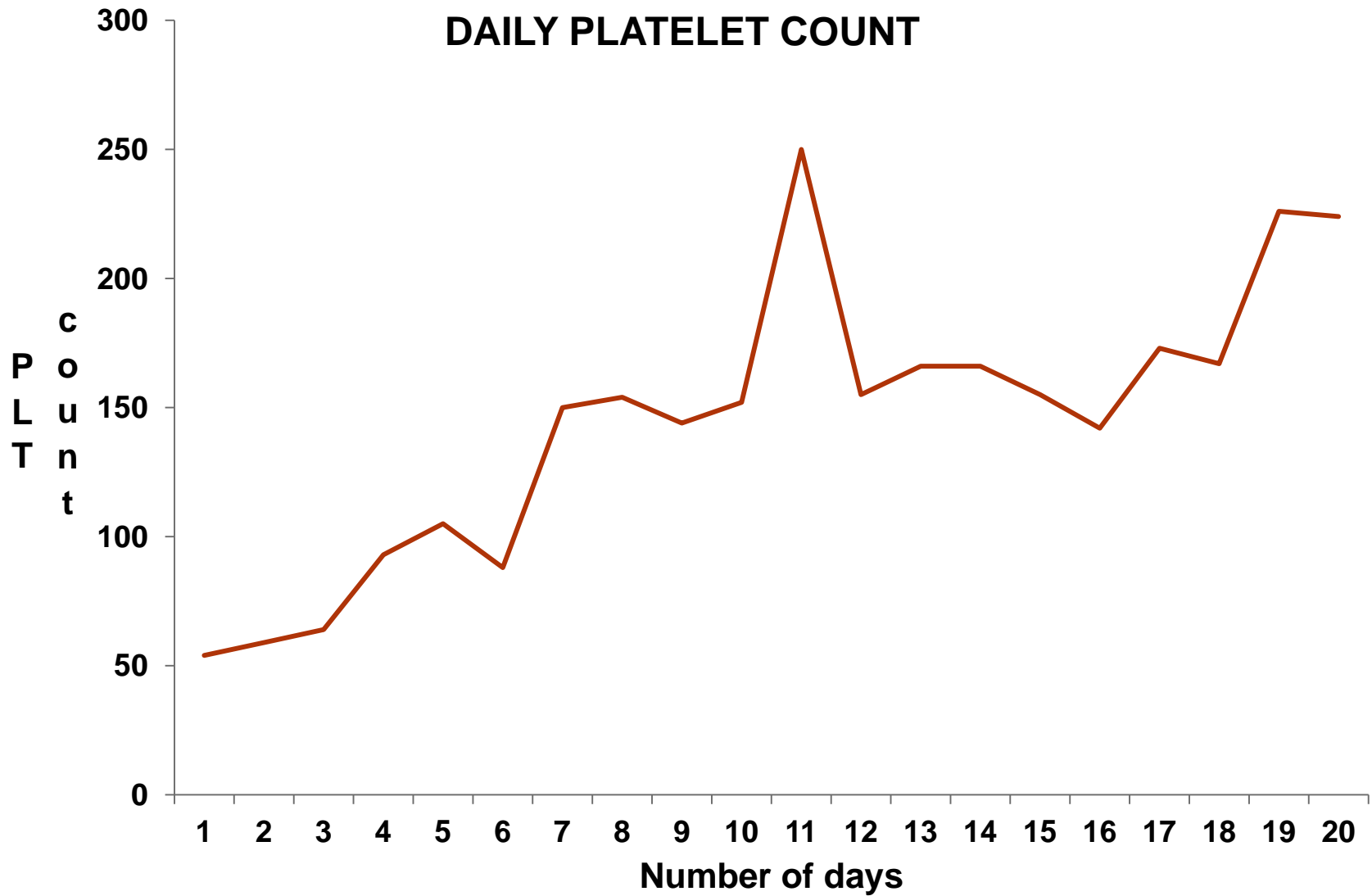
The laboratory results of the patient revealed:

- Progressing anaemia
- Leucocytosis
- Increased creatinine
- LDH - 6388 U/L (norm: 298-531 U/L)

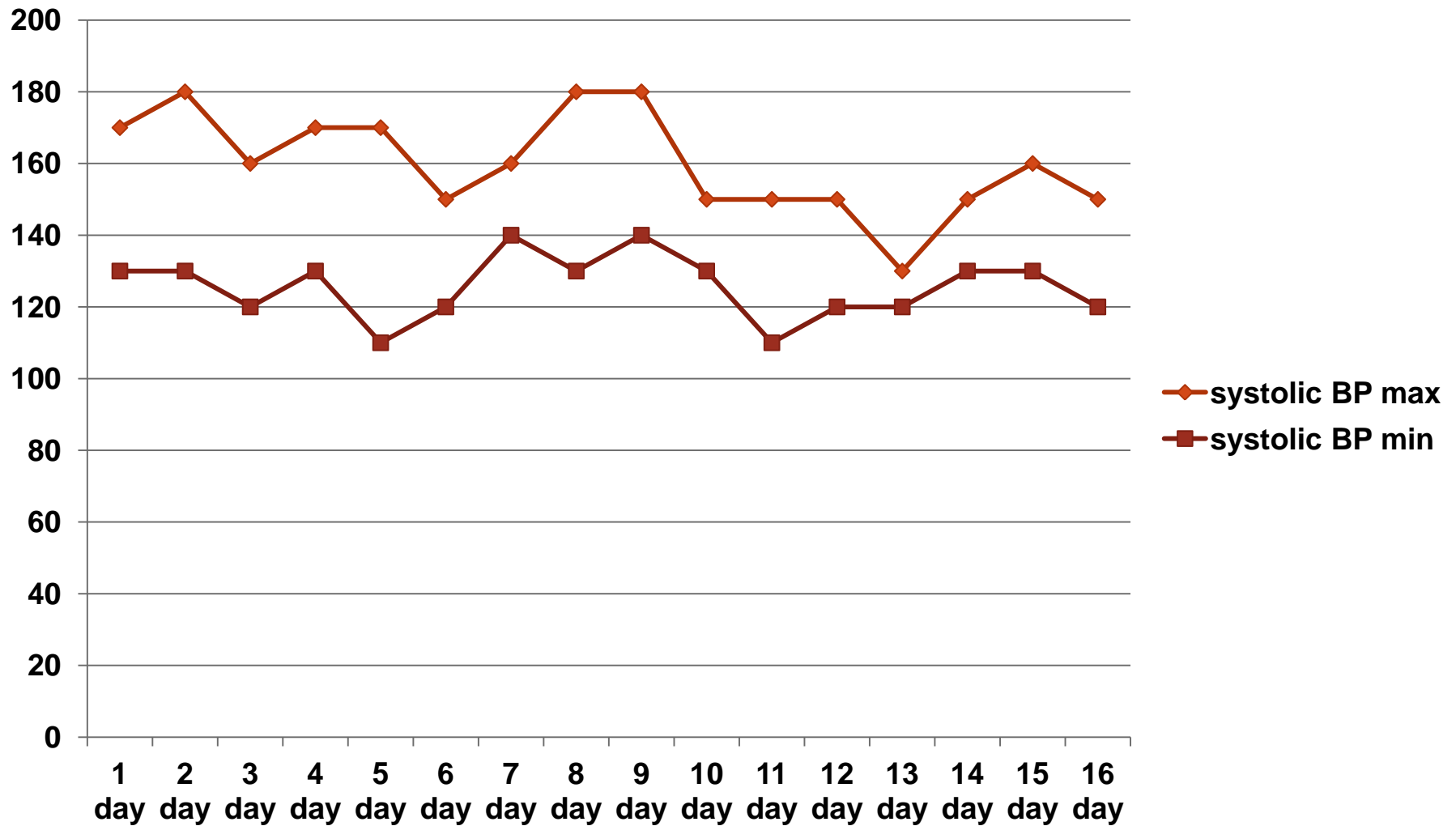
DAILY LEVELS OF AST & ALT IN THE PATIENT



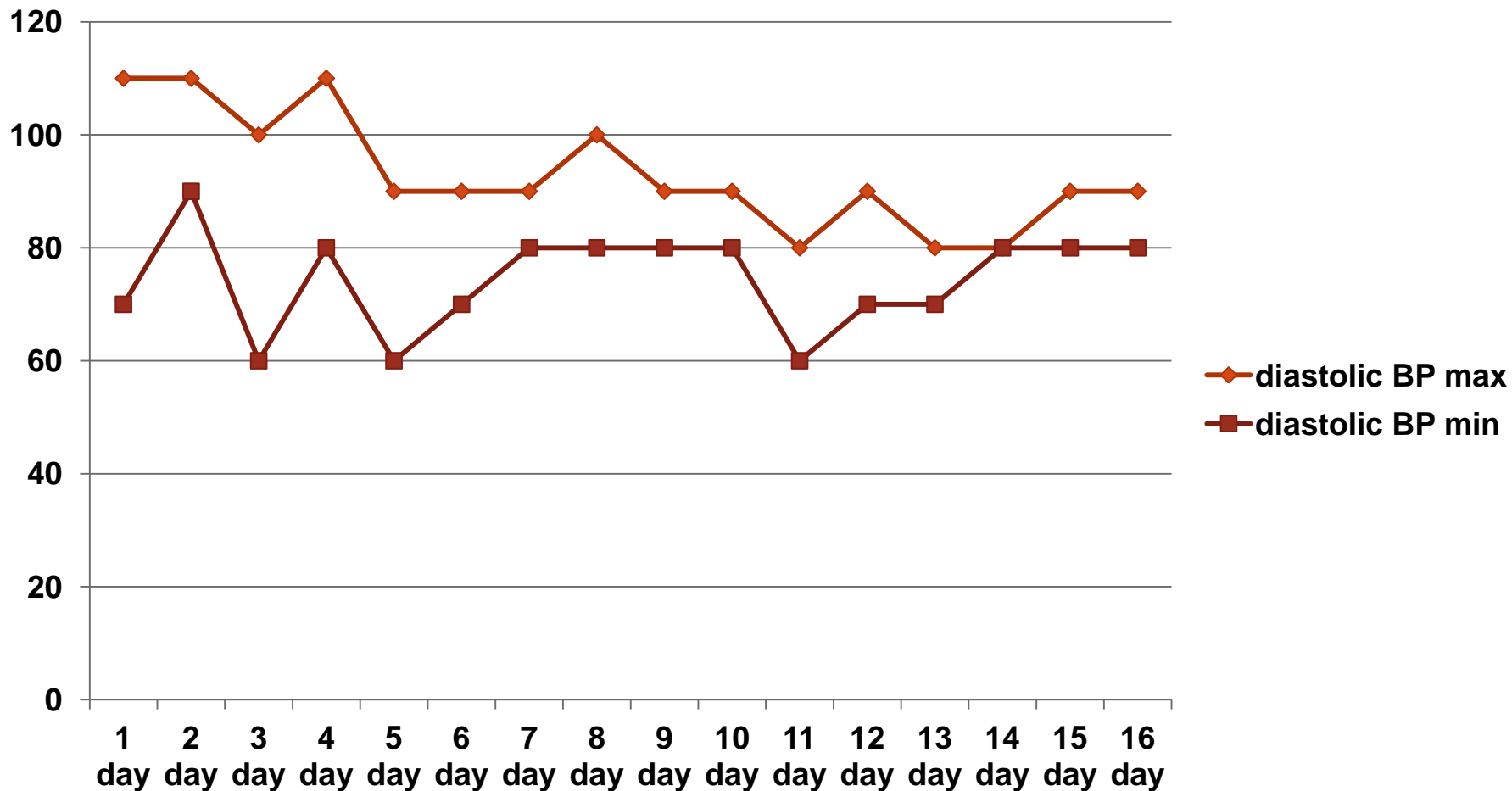
DAILY PLATELET COUNT



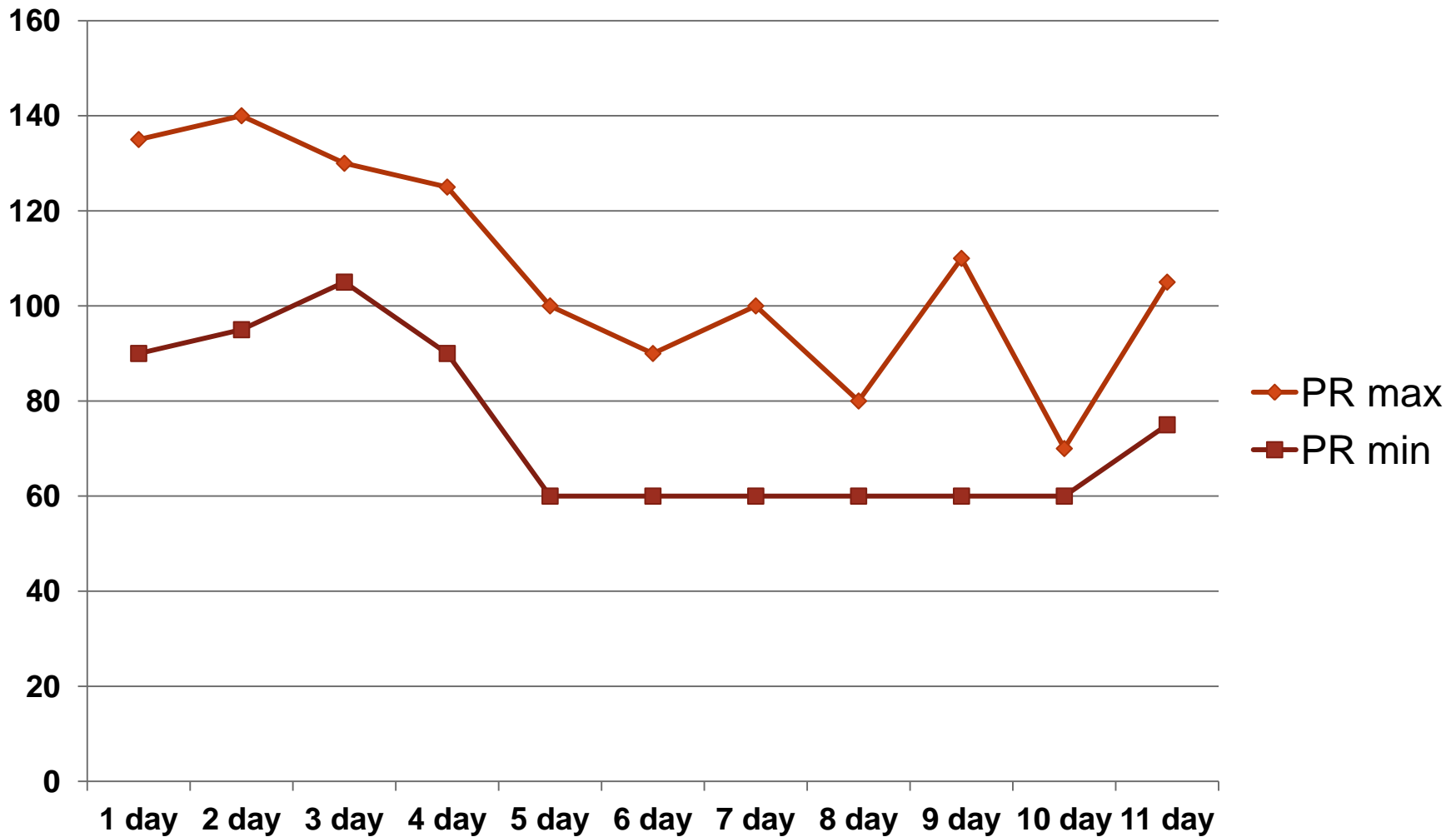
Systolic Blood Pressure: max and min (mm Hg)



Diastolic Blood Pressure: max and min (mm Hg)

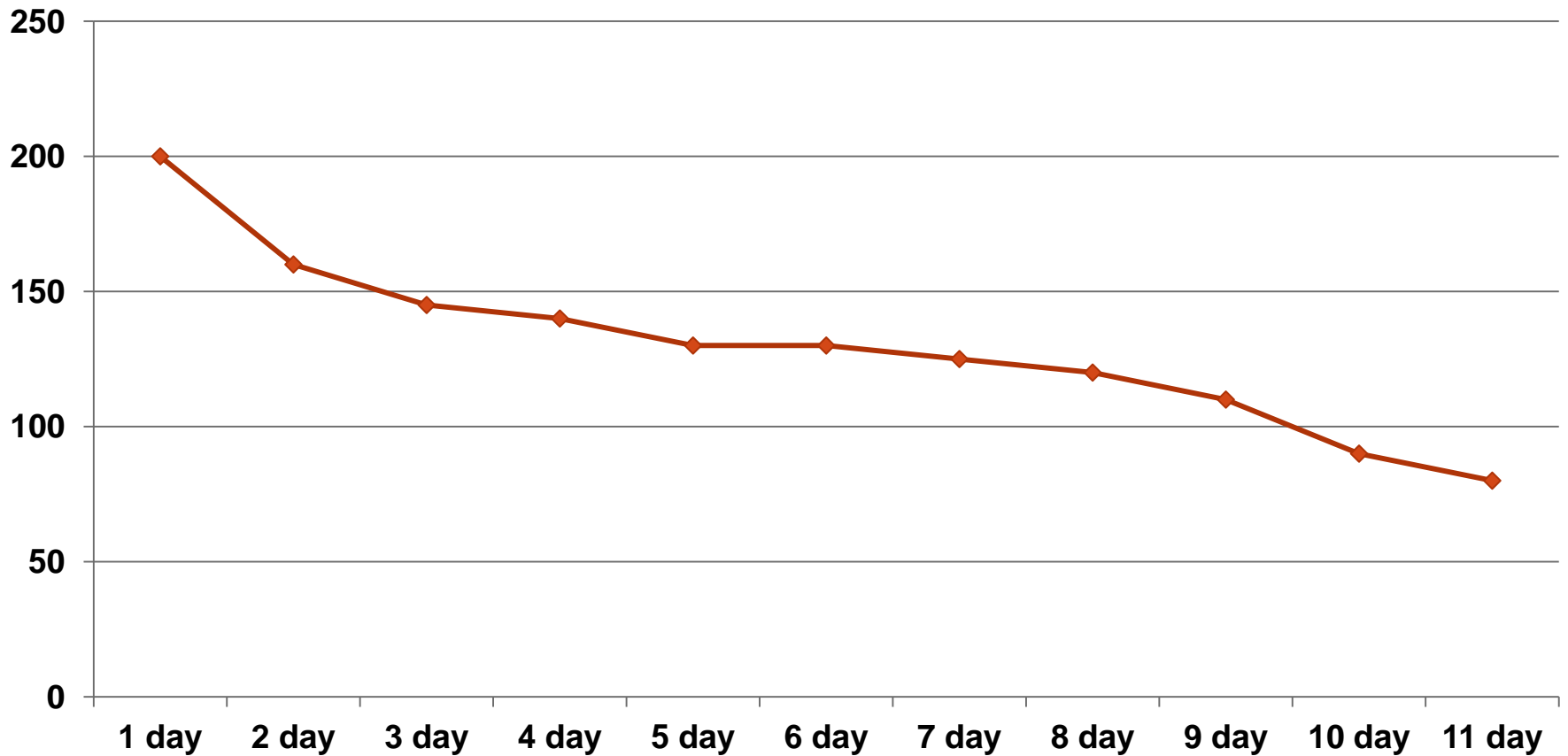


Pulse rate: max and min (bits/min)



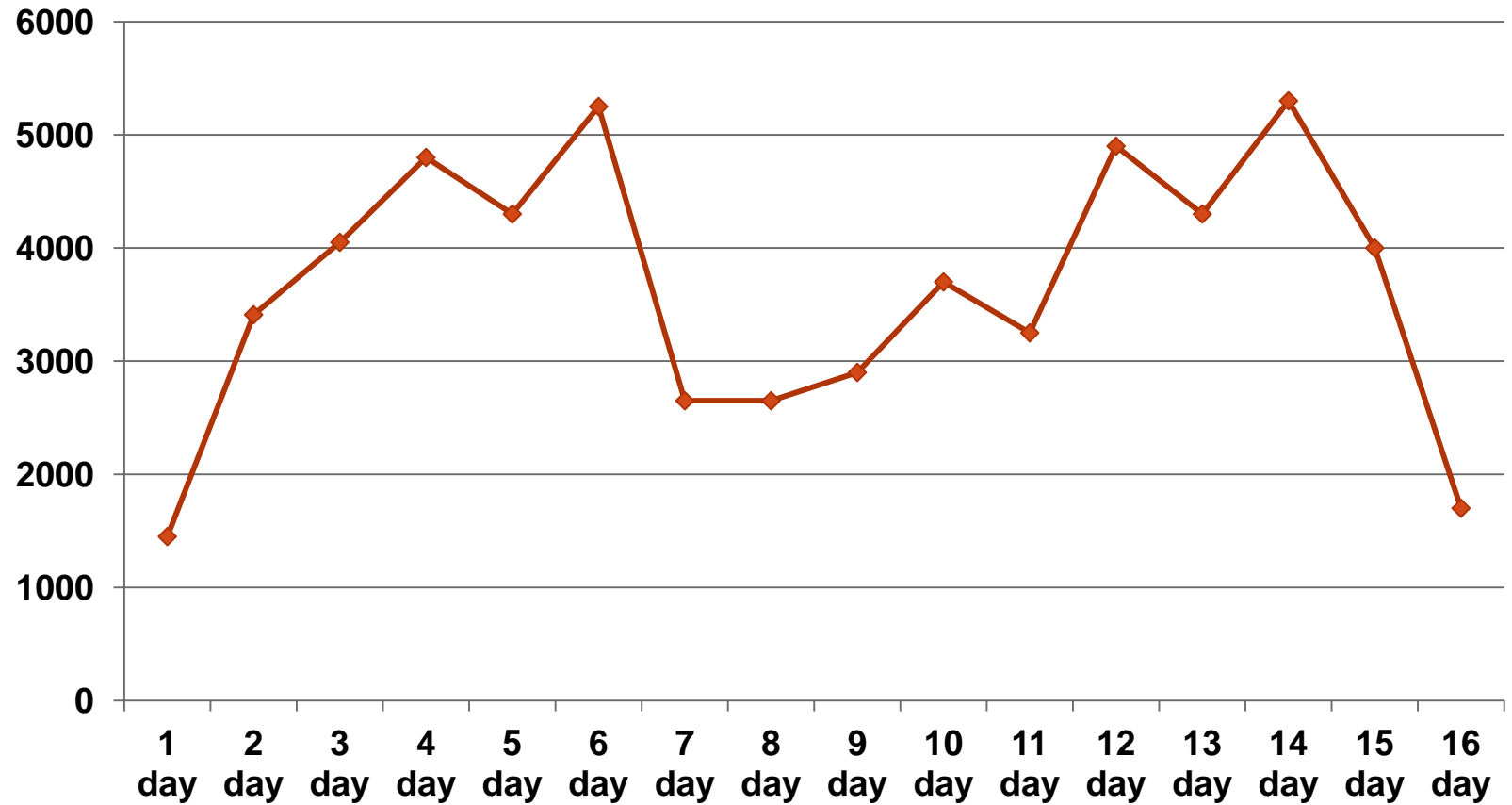
Central venous pressure (mm H₂O)

CVP



Urine output (ml/24h)

urine output



Instrumental investigation:

- Ultrasound showed a 110x75 mm infarction area in the right lobe of liver.
- Fibrogastroscopy revealed multiple stress ulcers.
- Selective carotid angiography with contrast revealed pathological hyper-vascularization of nasopharyngeal region from the upper maxillary and medial meningeal arteries. Endovascular embolization was provided to stop severe nasal bleeding.

It was also noticed in the patient after endovascular surgery:

- Sensory motor aphasia
- Right sided hemi-paresis
- Ischemic stroke in the left medial brain artery on MRI.

Based on the laboratory criteria, the patient was classified according to:

- Mississippi classification – Class 1 HELLP Syndrome
- Tennessee classification – Complete HELLP syndrome

MANAGEMENT

Three major options for the management severe preeclampsia and HELLP syndrome:

- **Immediate delivery which is the primary choice at 34 weeks' gestation or later.**
- **Delivery within 48 hours after evaluation, stabilization of the maternal clinical condition and Steroid treatment. At 27 to 34 weeks of gestation, this option appears appropriate and rational for the majority of cases.**
- **Expectant (conservative) management with Steroid treatment for more than 48–72 hours may be considered in pregnant women before 27 weeks' gestation.**

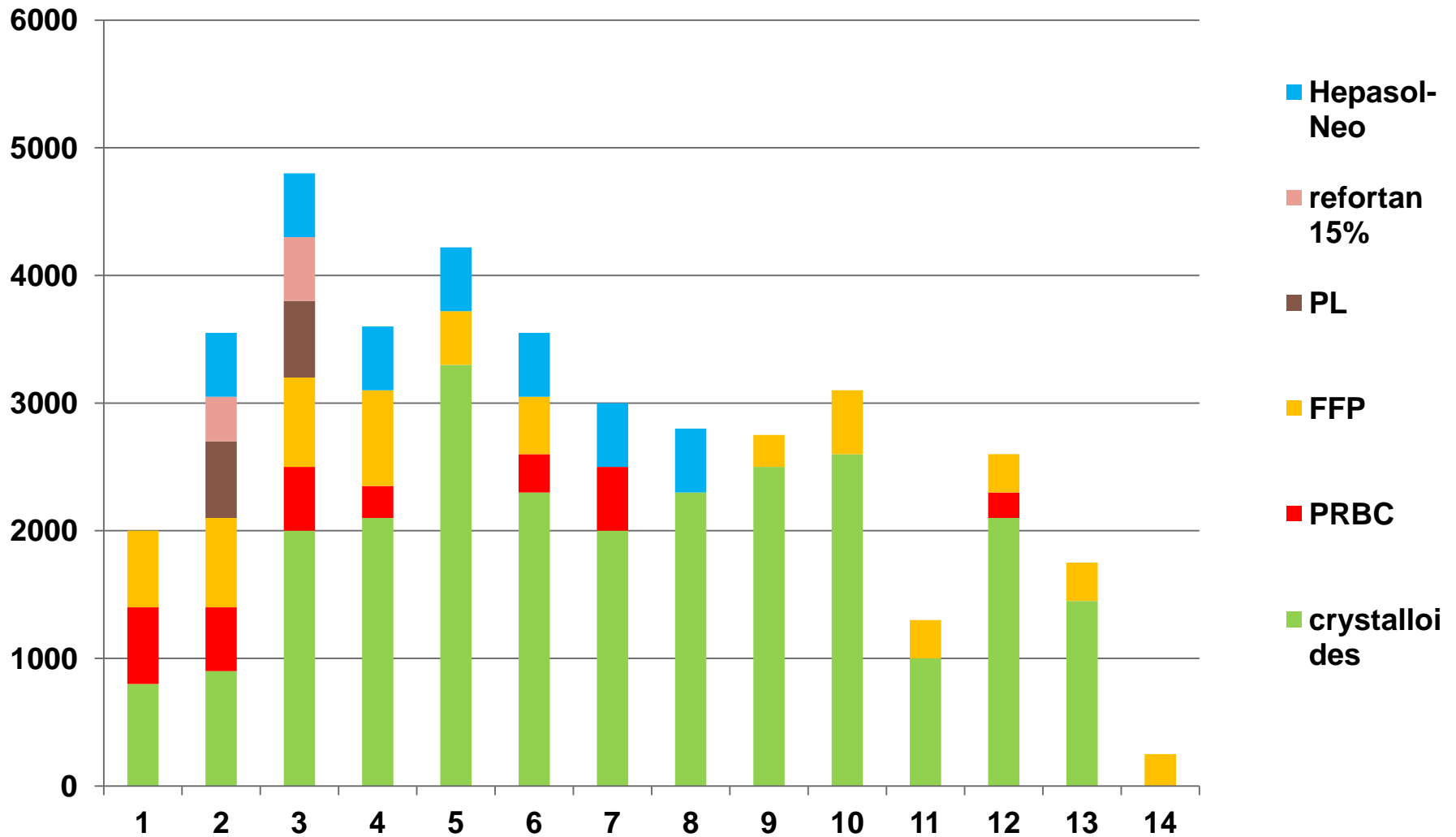
TREATMENT

In the treatment of the patient, 25 drugs and 53 drugs were used at the district and regional hospital respectively.

The medication included:

- Fluid infusion therapy, PRBC, FFP, Platelets.
- Methylprednisolone
- Anti-hypertensive drugs
- Anticonvulsants
- Novo-Seven
- Antibiotics
- Lazix

I/V infusions



CONCLUSION

The patient recovered with complete neurological restoration.

HELLP-syndrome has severe complications and extensive preparation and proper monitoring are necessary for successful management.

Special thanks to prof. Tkachenko Ruslan
Afanasyevich for consultation in treatment of this
patient!

**Thank you for
your attention!**