



## LIVER AND RENAL AND PLATELET COUNTS AFTER DELIVERY IN PATIENTS WITH SEVERE PRE-ECLAMPSIA

Pregnancy complicated by severe pre-eclampsia remote from term is associated with increased maternal and perinatal morbidity and mortality.<sup>1</sup> Pre-eclampsia usually improves soon after delivery, but may persist and may cause complications in the puerperium.<sup>2</sup> In deciding how long after delivery the

investigations should be continued it is necessary to know how soon after delivery results of the special investigations return to normal.

**Methods.** Fifty-one patients with severe pre-eclampsia<sup>3</sup> were studied from admission to 4 days after delivery. Blood for full blood counts and renal and liver function tests was taken on admission, then every 2nd or 3rd day until delivery, and then daily until the 4th day after delivery. Differences in the blood pressure, amount of proteinuria and special investigation

**Table I. Changes in special investigation results after delivery**

	Admission	Before delivery	Delivery	Day 1	Day 2	Day 3
<b>Systolic blood pressure (mmHg)</b>						
Mean	166	160	154	148	143	148
Median	160	160	150	150	140	150
Range	110 - 250	110 - 250	120 - 250	120 - 210	110 - 190	120 - 200
<b>Diastolic blood pressure (mmHg)</b>						
Mean	111	106	101	95	89	91
Median	110	104	100	90	90	90
Range	90 - 150	70 - 150	70 - 140	60 - 130	70 - 110	60 - 130
<b>Proteinuria (+ on Multistix)</b>						
Mean	2.7	2.6	2.4	1.8	1.6	1.5
Median	3	3	2	2	2	2
Range	1 - 4	1 - 4	1 - 4	0 - 3	0 - 2	0 - 3
<b>Urea (mmol/l)</b>						
Mean	4.2	4.3	4.9	5.1	4.2	4.0
Median	3.6	4.2	4.5	4.9	3.4	3.6
Range	1.7 - 11.4	2.2 - 11.4	2.2 - 15.4	2.4 - 12.4	1.7 - 15.7	1.7 - 17.3
<b>Serum creatinine (mmol/l)</b>						
Mean	79.5	82.3	82.4	75.8	73.2	78.6
Median	68.0	73.0	71.0	66.0	69.0	69.0
Range	44 - 385	44 - 385	46 - 362	45 - 281	31 - 353	47 - 419
<b>Haemoglobin (g/dl)</b>						
Mean	12.3	11.8	12.5	10.9	10.7	10.9
Median	12.4	12.1	12.3	11.1	11.1	11.0
Range	6.2 - 16.0	6.6 - 14.5	7.5 - 18.0	4.2 - 14.6	5.7 - 14.2	6.6 - 14.3
<b>Packed cell volume (%)</b>						
Mean	35.6	34.4	36.3	31.8	31.5	32.1
Median	36.0	34.9	35.7	31.9	32.0	32.6
Range	19.8 - 46.8	19.8 - 41.4	26.0 - 53.0	10.9 - 53.3	16.9 - 43.5	18.3 - 39.2
<b>Platelet count (<math>\times 10^9/l</math>)</b>						
Mean	195	181	172	178	195	215
Median	189	175	165	172	184	207
Range	57 - 438	57 - 410	46 - 438	71 - 389	76 - 396	57 - 499
<b>LDH (U/L)</b>						
Mean	362	379	361	288	323	317
Median	276	240	265	283	300	313
Range	140 - 2 778	135 - 2 778	148 - 2 049	153 - 589	156 - 904	146 - 687
<b>AST (U/L)</b>						
Mean	48	52	64	88	41	35
Median	26	25	25	33	28	28
Range	8 - 562	9 - 562	8 - 1 084	5 - 2 543	10 - 332	13 - 143
<b>ALT (U/L)</b>						
Mean	35	31	38	35	38	35
Median	15	15	16	17	21	21
Range	5 - 341	5 - 341	5 - 404	4 - 254	2 - 254	5 - 241





results were assessed by means of the Kruskal-Wallis ANOVA by ranks tested and the Mann-Whitney *U*-test.

**Results.** Platelet counts below  $100 \times 10^9/l$  were recorded in 18 patients (5%). In 5 of them the low value occurred for the first time after delivery. Thirteen of them also had aspartate aminotransferase (AST) values above 70 U/l. Five developed the HELLP syndrome (haemolysis, elevated liver enzymes and low platelet count). On day 4 87% of patients still had proteinuria and platelet counts were below  $100 \times 10^9/l$  in 4%.

Downward trends were observed in the mean systolic and diastolic blood pressures and proteinuria. The haemoglobin values also declined significantly from before until after delivery ( $P = 0.076$ ). Blood urea rose gradually until the first day after delivery and then started declining. For all other tests no significant differences were observed. Liver function results were very abnormal in a few patients before delivery, which explains the much higher mean values. Although the mean and median values for lactate dehydrogenase (LDH) did not change much during the study period, the maximum values declined from the day of delivery (Table I).

**Comments.** Although the systolic and diastolic blood pressure and amount of proteinuria started to normalise after admission, owing to antihypertensive treatment or delivery, the same is not true for all the special investigations. In 5 patients the low platelet count became apparent for the first time after delivery. Additionally, high AST and alanine aminotransferase (ALT) values were recorded on the day after or on the day of delivery. Liver and renal function tests and platelet counts should therefore be continued after delivery and discontinued only when a steady decline is noted.

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