INTRODUCTION

Newborns admitted to the intensive care unit (ICU) are exposed to multiple painful and stressful procedures. It is postulated that high pain exposure in the first weeks of life can have a long-lasting impact on the hypothalamic-pituitary-adrenal (HPA) axis. Assessment of the salivary cortisol (SC) is a useful method for monitoring stress response of HPA axis.

AIMS

2. Evaluation of the influence of pain exposure related to hospitalization on HPA axis activity.

METHODS

Newborns hospitalized in ICU were assessed for the study. Preterm infants were enrolled after completion of 35 weeks of postmenstrual age (PMA), whereas term infants before being discharged home.

Saliva collection for morning SC:
- between 6 and 9 a.m.
- before routine nursing procedures
- at least 60 minutes after feeding
- collection time up to 10 minutes
- optimal sample volume 250 µl

RESULTS

The study group consisted of 25 (38.46%) term and 40 (61.54%) preterm neonates.

Table 1. Basic characteristics of the analysed group

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Group</th>
<th>Term</th>
<th>Preterm</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male, n (%)</td>
<td>20 (50%)</td>
<td>14 (56%)</td>
<td>0.64*</td>
<td></td>
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<tr>
<td>Gestational age, weeks</td>
<td>32 (28-24)</td>
<td>39 (38-10)</td>
<td>&lt;0.001**</td>
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<tr>
<td>Birth weight, g</td>
<td>1500 (1130-2030)</td>
<td>3500 (3000-3700)</td>
<td>&lt;0.001**</td>
<td></td>
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<tr>
<td>Cesarean delivery, n (%)</td>
<td>34 (85%)</td>
<td>10 (40%)</td>
<td>&lt;0.001*</td>
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<tr>
<td>Apgar score 1st minute</td>
<td>6 (5-8)</td>
<td>9 (5-10)</td>
<td>0.18**</td>
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</tbody>
</table>

Table 1. Comparison of the studied groups

The median hospitalization time before analysis of morning SC was 7 days for term and 29 days for preterm children.

CONCLUSIONS

1. Concentrations of morning SC did not differ between term and preterm infants.
2. In term infants activity of HPA axis might be altered by repeated painful stimuli.
3. Prematurity did not affect the response of HPA axis to painful procedure.

REFERENCES