Hemodialysis for Salicylate Toxicity during Therapeutic Hypothermia
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Background

- Hemodialysis (HD) is a well-established method of rewarming after accidental hypothermia.
- Less is known about the effect of HD on temperature in the setting of therapeutic hypothermia after cardiac arrest (HACA).
- We hypothesize that when indicated for the treatment of overdose, HD can be performed during HACA without adverse event.

Case

- 57 yo with self-inflicted stab wound to left chest with large pneumothorax, treated with tube thoracostomy.
- Immediately post arrest, venous blood gas showed a pH of 7.18 and a PaCO₂ of 73.
- Serum aspirin (ASA) level drawn at the time of arrest was 100 mg/dL.
- HD was indicated for the treatment of salicylate overdose, however, concerns arose regarding dialysis catheter placement and temperature maintenance during active cooling.
- After discussions with toxicology, HD was initiated.
- We noticed her temperature rose slightly while receiving HD.
- During CVVH and continued HACA, she was consistently maintained within the goal temperature range, with only one outlying temperature of 34.5°C.
- Patient improved and was discharged to inpatient psychiatry on hospital day 46.

Discussion

- The patient was actively cooled to goal temperature (32-34°C) within 3 hours of initiating the hypothermic protocol despite placement of the dialysis catheter and preparing to start HD.

Table: Temperature and aspirin concentration over time

<table>
<thead>
<tr>
<th>Time</th>
<th>9:23</th>
<th>11:00*</th>
<th>13:00</th>
<th>14:00</th>
<th>15:00*</th>
<th>16:30</th>
<th>20:00</th>
<th>22:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA (mg/dL)</td>
<td>100</td>
<td>101</td>
<td>108</td>
<td>21</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temp (C)</td>
<td>40.7</td>
<td>35.4</td>
<td>32.9</td>
<td>32.4</td>
<td>34.2</td>
<td>34.9</td>
<td>33.3</td>
<td></td>
</tr>
</tbody>
</table>

*Hypothermic protocol initiated + Hemodialysis initiated.

Conclusion

- HACA should not interfere with initiation of HD for the treatment of salicylate toxicity.