**A749 - Immediate hemodynamic response to fluid challenge is independent of fluid type**

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**Introduction:**
A bi-center randomized controlled trial has recently been published that investigates the impact of the type of fluid (crystalloid versus colloid) on patient outcome following major surgery [1]. The study used a closed-loop fluid delivery system to eliminate the clinician bias when determining when to deliver fluids. The goal of the current analysis is to compare the immediate hemodynamic response to 100 ml fluid boluses of either a crystalloid or a colloid solution.

**Methods:**
Patient consent was obtained prior to transferring the data from [1] to Edwards Lifesciences for further post-hoc analysis. The percent change in stroke volume (DSV) following each 100mL bolus was tabulated and cross-referenced to the type of fluid. The responder rate and the DSV cumulative distribution function (CDF) were determined for each type of fluid administered. A responder was defined as a DSV ≥ 5% for a 100mL fluid challenge. The mean DSV was compared between the two groups using a student t-test.

**Results:**
From the 160 datasets reported in [1], 119 were used in the analysis. Descriptive statistics are summarized in Table 1 and the CDFs are plotted in Figure 1. More crystalloid boluses were administered. In both groups, the responder rate was around 50%. Mean DSV was not significantly different between groups (p = 0.57).

**Conclusion:**
We observed similar responder rates and CDFs with the two fluid types, suggesting that the immediate hemodynamic response to 100 ml fluid boluses is independent from the fluid type. We therefore hypothesized that it is the longer intra-vascular persistence of the colloid that explain the lower number of boluses required to achieve the hemodynamic endpoints targeted in the clinical study [1].

**References:**

**Table 1:**

<table>
<thead>
<tr>
<th>Fluid Type</th>
<th>Crystalloid</th>
<th>Colloid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cases</td>
<td>57</td>
<td>62</td>
</tr>
<tr>
<td>Number of Boluses</td>
<td>873</td>
<td>578</td>
</tr>
<tr>
<td>Responder Rate</td>
<td>49%</td>
<td>51%</td>
</tr>
<tr>
<td>Mean [SD] DSV</td>
<td>5.6 [13.2]</td>
<td>6.0 [12.0]</td>
</tr>
</tbody>
</table>

*Descriptive Statistics of Dataset*
Cumulative distribution functions of delta stroke volume for crystalloid and colloid fluid boluses