AN EVALUATION OF AN EXISTING PROGRAM - THE FLUID RESUSCITATION INITIATIVE

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INTRODUCTION

Background
• Sepsis is a global disease with high mortality rates, even in the face of improved infectious treatments (Kleinpell et al., 2013).
• Critically ill septic patients commonly require aggressive fluid resuscitation therapy to reverse tissue hypoxia, prevent progression to organ failure, and improve patient outcomes (Mark & Cavallazzi, 2013).
• The Surviving Sepsis Campaign provides bundled recommendations for sepsis management, and adherence to the guidelines has been shown to improve outcomes in sepsis (Garmani et al., 2010; Levy et al., 2010).
• Extensive review of the literature found emerging themes including resuscitate quickly, the type of fluid carefully, and resuscitate cautiously.

PICOT Question
• In adult hospitalized patients with sepsis who require fluid resuscitation (P), how has implementation of the new Fluid Resuscitation Initiative (I) affected protocol adherence (O) over a six-month period following implementation (T)?

Objectives
1. 25% of septic patients will have had a sepsis protocol with the FRI initiated.
2. There will be a 5% decrease in the use of NS for fluid resuscitation in sepsis after the FRI.
3. There will be a 5% increase in meeting the 30mL/kg requirement for fluid resuscitation in septic shock after the FRI.

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MATERIALS AND METHODS

Measures:
• Using a confidence level of 95%, a maximum of 5% margin of error, a population size of 70, with a 50% response distribution, a minimum of 120 charts were required at baseline and follow-up (Rassoul, 2004).
• There were not 120 charts at each time frame; such all available charts were used for review.
• The Chi-square Test of Independence was used to compare the changes in outcomes between baseline and follow-up chart reviews, and to analyze the nominal level data.
• The phi coefficient (φ) was used as an index to describe the magnitude of the effect from the intervention with values .00, .30, and .50 corresponding to small, medium, and large respectively.
• Ratio level data was analyzed with the Independent t-test and the Cohen’s coefficient was used as an index to describe the magnitude of the effect from the intervention with values .00, .50, .80 corresponding with small, medium, and large respectively.
• IBM SPSS Statistics version 24 (Chicago, IL) was used for statistical analysis. The level of significance was set at p ≤ .05.

RESULTS

Protocol initiation occurred in 30% (n = 18) of the baseline and 48% (n = 29) of the follow-up.
• This was both statistically and clinically significant, χ²(1) = 4.23, p = .04, φ = .2.
• Subjects in the follow-up group were almost two times as likely to have a sepsis protocol initiated, OR = 1.95, 95% CI [1.03, 3.36].

Type of fluid given - In the baseline group, 43% (n = 26) were given no fluid while 57% (n = 34) were given NS.
• In the follow-up group 23% (n = 14) were given no fluid and 77% (n = 46) were given NS.
• This was statistically and clinically significant, χ²(1) = 5.40, p = .02, φ = .2.
• There was no LR administered as the type of fluid bolus for any subject of either group.

Receiving 30 mL/Kg in the three hour window - 15% (n = 9) met the requirement in the baseline group, 40% (n = 24) met the requirement in the follow-up group.
• This increase was statistically and clinically significant, χ²(1) = 9.40, p = .002, φ = .3.
• Subjects in the follow-up group were almost two times more likely to receive the recommended amount of fluid, OR = 1.89, 95% CI [1.27, 2.74].

CONCLUSIONS

• Objective 1 - 25% of septic patients will have had a sepsis protocol with the FRI initiated - MET. 48% of septic patients had the sepsis protocol with the FRI initiated.

• Objective 2 - 5% decrease in the use of NS for fluid resuscitation in sepsis after the FRI - NOT MET. No septic patients received LR as the fluid of choice for resuscitation.

• Objective 3 - 5% increase in meeting the 30mL/kg requirement for fluid resuscitation in septic shock after the FRI - MET. Number of patients who received the recommended amount of fluid resuscitation increased by 25%.

• Initiation of a protocol outlining parameters for efficient fluid resuscitation can help septic patients meet the 30 mL/Kg fluid resuscitation requirement.

REFERENCES

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