system are both useable in caring for burn patients when the medical staff does not have a sufficient level of experience and/or background to care for the burn patient, particularly during transport to a burn center.

VII. GLOSSARY

ABA—American Burn Association
ABLS—Advanced Burn Life Support
HPB—Hours Post Burn
LR—lactated Ringer's solution
PID—proportional-integral-derivative
TBSA—Total Body Surface Area
% TBSA—percentage Total body surface area
UO—Urinary Output
USAISR—U.S. Army Institute of Surgical Research
UTMB—University of Texas Medical Branch

We claim:

1. A system for use in resuscitating a patient comprising:
a urine sensor;
an infusion pump; and
a processor connected to said urine sensor and said infusion pump, said processor having
means for calculating an infusion rate based on at least the current infusion rate, the current urinary output, infusion rate model based constants, the patient's weight, the percentage of total body surface area, and a Gaussian function centered on a target urinary output, and
means for controlling operation of said infusion pump based on the calculated infusion rate.

2. The system according to claim **1**, wherein the infusion rate model based constants include an infusion rate constant and a urinary output constant.

3. The system according to claim **1**, further comprising a display, and
said processor further includes means for driving said display and receiving information from said display of information entered by a user including an infusion rate different than the infusion rate calculated, and
said controlling means operates the infusion pump at the different infusion rate received from the user until a new infusion rate is received or calculated.

4. The system according to claim **1**, further comprising a selector with at least two positions including a closed loop position and a semi-closed loop position, said selector is in communication with said processor.

5. The system according to claim **1**, wherein said calculating means uses the following equation

$$I_t = I_{t-1} + e(t) \times \frac{IRC_t}{UOC_t} \times Y_{weight} \times Y_{tbsa} \times G_{UO}$$

where I_t is the new infusion rate, I_{t-1} is the last infusion rate, e(t) is the urinary output error, IRC_t is the infusion rate constant at time t based on the hours post burn, UOC_t is the urinary constant, Y_{weight} is a modifier based on the patient's weight, Y_{tbsa} is a modifier based on the percentage of the total body surface area, and G_{UO} is the Gaussian function based on the target urinary output.

6. The system according to claim **1**, further comprising means for notifying medical staff when a problem has arisen with the patient.

7. The system according to claim **1**, further comprising means for notifying medical staff when a problem has arisen with the system.

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