

remains controversial in sepsis. This study aims to evaluate whether overweight and obese patients with sepsis have different clinical characteristics and mortality outcomes compared to patients with normal BMI.

Methods: This retrospective study included 404 adult patients diagnosed with sepsis and admitted to the intensive care unit (ICU). Patients were divided into two groups based on the BMI (kg/m²): group 1 (18.5 ≤ BMI < 25 kg/m²) and group 2 (25 ≤ BMI < 40 kg/m²). Demographic characteristics, comorbidities, severity scores, and clinical outcomes were analyzed. Continuous variables were reported as medians with interquartile ranges (25th–75th percentiles), while categorical variables were presented as frequencies and percentages. Group comparisons were performed using the Mann–Whitney U test for continuous variables and the chi-square or Fisher's exact test for categorical variables, depending on distribution. Variables that demonstrated statistical significance in the univariate analysis were subsequently entered into a multivariable logistic regression model to identify independent associations between BMI category and clinical outcomes.

Results: The median BMI of septic patients was 25.8 kg/m² (IQR: 22.7–29). Compared to Group 1, patients in Group 2 had a significantly higher prevalence of type 2 diabetes mellitus (DM, 44.6% vs. 33%, *p* = 0.017) and neurologic diseases (33.8% vs. 23%, *p* = 0.017). The 28-day mortality was significantly lower in Group 2 compared to Group 1 (37.1% vs. 48.2%, *p* = 0.024). Variables that were significant in univariate analysis were further evaluated using multivariable logistic regression. In the adjusted model, the presence of type 2 DM (OR: 1.68; 95% CI: 1.11–2.53; *p* = 0.014) and neurologic diseases (OR: 1.70; 95% CI: 1.09–2.65; *p* = 0.020) remained independently associated with an increased likelihood of having a BMI ≥ 25 kg/m². The 28-day mortality was independently associated with a lower probability of being overweight or obese (OR: 0.62; 95% CI: 0.41–0.92; *p* = 0.019).

Variable	All patients n=404	Group 1 n=191	Group 2 n=213	p-value
Age (years), median (IQR)	64 (53–74)	65 (51–74)	64 (55–74)	0.817
Gender, Male, n (%)	251 (62.1)	131 (68.6)	120 (56.3)	0.831
APACHE II score, median (IQR)	25 (20–31)	25 (20–30)	25 (19–31)	0.771
SOFA score, median (IQR)	9 (6–12)	9 (6–13)	9 (6–12)	0.545
mNUTRIC score	6 (5–7)	6 (5–7)	6 (5–7)	0.830
Comorbidities, n (%)				
Type 2 DM	158 (39.1)	63 (33)	95 (44.6)	0.017
Hypertension	245 (60.6)	109 (57.1)	136 (63.8)	0.164
Coronary artery disease	148 (36.6)	70 (36.6)	78 (36.6)	0.995
Chronic kidney disease	101 (25)	42 (22)	59 (27.7)	0.186
Chronic liver disease	36 (8.9)	13 (6.8)	23 (10.8)	0.160
Solid organ tumors	179 (44.3)	92 (48.2)	87 (40.8)	0.139
Hematological malignancies	53 (13.1)	28 (14.7)	25 (11.7)	0.385
Neurologic diseases	116 (28.7)	44 (23)	72 (33.8)	0.017
Vasopressor use, n (%)	159 (39.3)	84 (44)	75 (35.2)	0.072
RRT requirement, n (%)	106 (26.2)	50 (26.2)	56 (26.3)	0.979
Need for intubation, n (%)	127 (31.4)	56 (29.3)	71 (33.3)	0.386
28-day mortality, n(%)	171 (42.3)	92 (48.2)	79 (37.1)	0.024

Conclusion: In septic ICU patients, a BMI between 25 and 39.9 kg/m² was associated with lower 28-day mortality rates compared to those with normal BMI, despite a higher prevalence of DM and neurologic diseases. This finding suggests that patients with elevated BMI may exhibit a distinct clinical phenotype during sepsis and could potentially benefit from a short-term survival advantage. However, as this association is observational in nature, further prospective and controlled studies are warranted to evaluate the validity of the obesity paradox hypothesis in this context.

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LB039

TRANSITIONING TO A PEA PROTEIN PLANT-BASED ENTERAL FORMULA (PPPBF) SUPPORTS GASTROINTESTINAL AND METABOLIC HEALTH IN TUBE-FED MEDICALLY COMPLEX ADULTS

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Rationale: Individuals in medical residential settings have specific nutritional requirements in response to a complex landscape of acute and chronic medical conditions, co-morbidities, and multiple medications. While there is evidence that plant-based dietary patterns improve aspects of health in healthy populations to our knowledge the benefits of transitioning medically complex residents to a PPPBF has not been assessed therefore we proposed that a PPPBF would be well tolerated based on Gastrointestinal indexes. This study will fill a critical evidence gap and may inform clinical guidelines for tube-fed individuals.

Methods: This was a three-month retrospective chart review involving medically complex, tube-fed adults who resided in a specialized medical residential facility. The facility follows a "seed to belly" approach,

emphasizing plant-forward nutrition to meet the dietary needs of its residents. To follow the facility's philosophy tube-fed residents were transitioned to a PPPBF following the collection of baseline data upon admission. This study conducted a within-subject pre/post analysis of GI function, weight, medication use and objective lab markers in a real-world residential setting.

Results: Twenty residents (10 males, 10 females) aged 21 to 58 years (mean age: 38), all with multiple medical diagnoses, such as intellectual disabilities (n=16), cerebral palsy (n=15), constipation (n=17), and vitamin D deficiency (n=13) successfully transitioned to a PPPBF. In this demographically and medically diverse sample of individuals, the transition was associated with a significant reduction in Type 7 Bristol stool movements (*p* = 0.025), as well as improved metabolic health, evidenced by a significant decrease in HbA1c levels (*p* = 0.001).

Conclusion: Due to the complexity of these residents, there is a higher risk of unmet medical and nutritional requirements. This is the first study that used a PPPBF to support GI tolerance and metabolic health. These results warrant additional prospective research as plant-based enteral formulations may improve specific aspects of resident health, reduce medical care intensity, and risk of malnutrition.

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LB040

ADEQUACY OF PROTEIN INTAKE AMONG CRITICALLY ILL PATIENTS IN THE MEDICAL INTENSIVE CARE UNIT (MICU) AT THE NATIONAL HOSPITAL OF SRI LANKA

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Rationale: Protein intake (0.8–1.3 g/Kg/d) is essential for critically ill patients, influencing recovery, immune function, and long-term outcomes. The lowest six-month mortality was observed when protein intake increased from <0.8 g/kg/day on days 1–2 to 0.8–1.2 g/kg/day on days 3–5 and above 1.2 g/kg/day after day 5, with timely intervention. This audit assessed protein intake adequacy compared to prescribed daily requirements to improve protein delivery among patients during the early MICU stay.

Methods: Data were collected retrospectively over one month from MICU dietitian records, feeding charts, and nursing documentation for 50 patients during the first week of their ICU stay. Daily Protein delivery was measured referring to food atlases and labels; adequacy was calculated as a percentage of the prescribed intake for each patient. More than 70% was considered adequate protein intake, according to ESPEN guidelines. Causes for inadequate protein delivery were analyzed according to a checklist. **Results:** Most patients, n=40 (80%), received inadequate protein intake during the first week of ICU stay. Individual protein delivery varied between 20% and 80% of the prescribed. Protein delivery was lowest during the first two MICU days, often below 30% of the prescribed, improving gradually by D4–D7, although it remained inadequate. The major contributing factor for inadequacy was non-delivering the prescribed blended/oral feed (72%); other factors include insufficient food intake due to fasting procedures (44%), fluid restrictions (32%), and unavailability of Oral Nutritional Supplements (ONS) (42%).

Conclusion: Inadequate protein delivery highlighted the need for targeted interventions and regular communication between MICU staff and the nutrition teams to strengthen early protein delivery.

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Liver and gastrointestinal tract LB041

INTESTINAL REHABILITATION IS DRIVEN BY A NOVEL CHYME RECIRCULATION SYSTEM

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Rationale: Short bowel syndrome (SBS) is a devastating condition. In absence of enteral nutrition (EN), patients are dependent on Total Parenteral Nutrition (TPN) and suffer from intestinal failure associated liver disease and gut atrophy. Intestinal adaptation (IA) and enteral autonomy (EA) remains the clinical goal. We hypothesized EA can be achieved using our DREAM system, (US patent 63/413,988) which allows EN via the stomach and then a mechanism for cyclical recirculation of nutrient rich distal intestinal content into proximal bowel enabling full EN despite SBS.

Methods: 24 neonatal pigs were randomly allocated to receive enteral nutrition (EN; n=8); TPN-SBS that received TPN only (n=8); or DREAM that were transitioned to EN by day 3 (n=8). Liver, gut, and serum were collected for histology, and serum biochemistry. Pairwise t-tests were used for normally distributed data, otherwise pairwise Mann-Whitney U test were conducted. All tests were 2-tailed using a significance level of 0.05.

Results: TPN-SBS piglets had significant cholestasis vs DREAM (p=0.001) with no statistical difference between DREAM and EN (p=0.14). The mean serum conjugated bilirubin for EN was 0.037 mg/dL, TPN-SBS 1.2 mg/dL, and DREAM 0.05 mg/dL. Serum bile acids were significantly elevated in TPN-SBS animals vs EN (p=0.007) and DREAM (p=0.03). The mean serum bile acids were EN 9.1 mg/dL, TPN-SBS 33.42 mg/dL, and DREAM 8.4 mg/dL. The mean GGT, a marker of cholangiocytic injury was significantly higher in TPN-SBS vs EN (p<0.001) and DREAM (p<0.001) with values of EN 21.2 U/L, TPN-SBS 47.9 U/L, and DREAM 22.5 U/L. p=0.89 DREAM vs EN. To evaluate gut growth, we measured the lineal gut mass (LGM), calculated as the weight of the bowel per centimeter. There was significant preservation in gut atrophy with DREAM. The mean proximal gut LGM was EN 0.21 g/cm, TPN-SBS 0.11 g/cm, and DREAM 0.31 g/cm (p=0.004, TPN-SBS vs DREAM). Likewise, the distal gut LGM was for EN 0.34 g/cm, TPN-SBS 0.13 g/cm, and DREAM 0.43 g/cm (p=0.006, TPN-SBS vs DREAM). On IHC, DREAM has similar hepatic CK-7 (marker for bile duct epithelium), p=0.18 and hepatic Cyp7A1, p=0.3 vs EN. We next evaluated IHC for LGR5 positive intestinal stem cells, capable of self-renewal and differentiation. No statistical differences were noted between EN and DREAM, p=0.18.

Conclusion: Our DREAM methodology resulted in a significant reduction in cholestasis injury markers as well as prevented gut atrophy in comparison to TPN-SBS piglets. DREAM presents a novel method which enables early full EN despite SBS. This methodology highlights a major advancement in the management of SBS and could bring a paradigm change in life saving therapeutic strategies for patients by driving intestinal adaptation and ultimate EN autonomy

Disclosure of Interest: None declared

LB042

LPS INDUCES TLR4 AND CYTOKINES IN A 3D PORCINE ENTEROID SYSTEM TO DRIVE MULTISYSTEM INJURY

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Rationale: The intestinal epithelium plays a critical role in gut homeostasis, serving as a physical barrier and modulating immune responses to