COVER PAGE FOR PROTOCOL AND STATISTICAL ANALYSIS PLAN

Official Study Title: Improving Retention of Nasoenteric Feeding Tubes in Pediatric Patients Using a Nasal Bridle

NCT number: NCT 04621734

IRB Approval Date: 04/09/2020

Unique Protocol ID: HSC20190225H

Form CT
UTHSA Clinical Trial Description

This form is not mandatory. Other documents are acceptable if equivalent information is provided.

UTHSCSA Tracking Number *(internal use only)*	HSC20190225H	**1. Original Version Date**	07/01/2019
		1.1. Revision Date(s) *add rows as needed*	10/08/19, 04/09/2020

2. Background

Briefly discuss the important literature relevant to the trial and that provides background for the trial. Include the importance of the trial and any relevant treatment issues or controversies.

Nasoenteric feeding tubes are commonly used in the Pediatric ICU as a way to enterally provide nutrition and medication. The traditional method of securing these tubes has been by the use of adhesive tape on the face but unintentional tube dislodgment continues to be a common occurrence. Tube dislodgment leads to delays in nutrition and medication administration, multiple tube replacements, which result in discomfort and extra radiation exposure, and increased consumption of hospital resources with the additional cost of replacement tubes and radiographs. The nasal bridle (BridlePro) is an FDA approved device invented and manufactured by Applied Medical Technology, Inc (AMT) and is an alternative securement method using the structure of the nasal cavity to secure the nasoenteric tube in both adults and children. There have been several studies in the adult population revealing a reduction in dislodgment but only 1 pediatric study, published in 2016, in a very narrow population. This is an investigator-initiated study to compare tube dislodgment rates when the tube is secured with adhesive tape vs the AMT BridlePro device.

3. Objectives and Endpoints *All data points collected in the study should support an objective or have a regulatory purpose.*

Complete the table – add rows as needed.

3.1. Objective(s) *Clearly and concisely define the primary and secondary outcomes.*	**3.2. Endpoint** *Clearly define the endpoints. (endpoints are the basis for concluding that the objective has been met).*	**3.3. Justification for Endpoint** *Briefly explain why the endpoint(s) were chosen.*
Primary outcome: Tube dislodgment rate Secondary outcomes: Time to tube dislodgment, cost of additional feeding tubes and radiographs, number of additional radiographs needed for tube replacement, time of missed nutrition	The endpoint will be when a patient no longer requires a nasoenteric tube because full oral feedings have been met, when a tube is dislodged and successfully replaced, or when the bridle has been in place for 30 days.	When a patient no longer requires a feeding tube, it is standard practice to remove the tube. When a tube is dislodged, the data will be collected for the study and they will have fulfilled the objective and the patient will resume standard treatment. The BridlePro is FDA approved for 30 days of use.

4. Rationale

Briefly state the reason for conducting the clinical trial.

The reason for conducting the investigator initiated clinical trial is to compare the use of a nasal bridle to adhesive tape as a way to secure nasoenteric feeding tubes to improve retention rates.

5. Study Design

5.1. Number of Groups/Arms	2	**Group name(s)**	Control arm and study arm

5.2. Overall Design

Select all applicable

☒	**Randomization**	☐	**Cluster Randomized**
☐	**Group-Sequential**	☐	**Adaptive Design**

☐	**Parallel Design**				☐	**Placebo-Controlled**							
☐	**Superiority**				☐	**Equivalence**				☐	**Non-inferiority**		
Device	☐	Pilot			☐	Pivotal				☐	Post-Approval		
Drug/Biologic	☐	Phase 1	☐	Phase 1/2	☐	Phase 2	☐	Phase 2/3	☐	Phase 3	☐	Phase 4	
☐	**Dose escalation**	*If yes, details →*											
☐	**Dose ranging**	*If yes, details →*											
☐	**Sub-studies**	*If yes, details →*											

5.3. Other Design Details:

6. Study Population		
6.1. Study Population(s) Label/Name *To add more populations – select a row, copy & paste*	**6.2. Identify the criteria for inclusion** *The criteria that every potential participant must satisfy, to qualify for study entry.* All individuals in this study population must meet all of the inclusion criteria in order to be eligible to participate in the study	**6.3. Identify the criteria for exclusion** *The characteristics that make an individual ineligible for study participation.* All individuals in this study population meeting any of the exclusion criteria at baseline will be excluded from study participation.
Patients who require a nasoenteric feeding tube, admitted at University Hospital, ages 0-18 yo	Need for nasoenteric feeding tube Admitted at University Hospital Age 0-18 yo	Facial trauma, nasal airway obstructions, thrombocytopenia (<100 K/µL), s/p septoplasty, patients with vomer bone graft, nasoenteric feeding tube placed and secured prior to being screened for study, contraindication for the use of the BRIDLEPro Does not meet inclusion criteria

6.4. Will screen failures be allowed to re-screen at a later date?	☒	**No**	☐	**Yes**	*If yes, describe criteria below ↓*

7. Study Intervention(s) being tested or evaluated

This can include prevention, diagnostic or therapeutic interventions (e.g., drug or device) or educational, health services or basic science interventions (e.g., educational program, health care delivery model, or examining basic physiology)

Dislodgment rates of nasoenteric feeding tubes when secured with the AMT BridlePro compared to adhesive tape. The adhesive tape will be the tape available in the unit and will be placed by the nurse or provider at the time of nasoenteric tube placement. The tape will be placed around the tube and secured to the cheek on the side of tube. The tape will be replaced as needed per nursing discretion when soiled or the adhesive properties are failing and this information will be tracked. The AMT BridlePro will be placed by the nurse or provider at the time of nasoenteric tube placement. Placement will use the BridlePro system included in the individual BridlePro packaging. Placement and securement will follow manufacturer recommendations and teaching. The BridlePro encircles the vomer bone of the nasal cavity to secure the tube. Sedation medication may be given per standard of care for nasoenteric tube placement at the discretion of the provider team but no separate or additional sedation medication will be given for securement with adhesive tape or the BridlePro.

8. Protocol-Directed procedures, items, services or tests

List all procedures directed by the study plan - including items or services provided as part of routine or conventional care and those needed to diagnosis or treat research related complications.

Important Note – The protocol directed procedures listed must match those in the Schedule of Activities (attachment)

8.1. Drugs *(trade and generic, dosage, route of administration)*

N/A

8.2. Devices

Nasoenteric feeding tube will be placed by the bedside nurse as part of routine care.
AMT BridlePro will be placed by trained nurses for patients on the study arm of the trial.

8.3. Biologics

N/A

8.4. Laboratory Tests

N/A

8.5. Imaging Procedures

No additional imaging will occur as part of the study. However, confirmatory radiograph for proper placement of the initial nasoenteric tube as part of our current standard of care will continue. Additional confirmatory radiographs for proper placement of replacement nasoenteric tubes as part of routine care when a tube is dislodged will also continue.

8.6. Other Research Procedures *(e.g., other safety and efficacy assessments.)*

Chart review/Data collection

8.7 Attach a Schedule of Activities (SOA) Excel File [Download the Template here: *Schedule of Activities*]	*Check to indicate that the SOA Excel File is attached →* ☐

9.	**Preparation/Handling/ Storage/Accountability of Investigational Drug, Biologic, or Device**
☐	*N/A - This study does not include any investigational products (e.g. drugs, devices or biologics)*
☐	*N/A - An Investigator Brochure is attached*
☐	*N/A - A Drug/Device Manual is attached*

9.1. Acquisition and accountability

State how the study intervention and control product will be provided to the investigator. Describe plans about how and by whom the study intervention will be distributed, including participation of a drug repository or pharmacy, and plans for disposal of expired or return of unused product.

AMT representative will provide in-person training for the nurses and providers placing the BridlePro and will provide the nasal bridles as per the clinical trial material transfer agreement. The nasoenteric tubes that will be used in the control and study arm are the standard tubes used in the unit and adhesive tape that is used for securing tubes in the control group.

9.2. Formulation, Appearance, Packaging, and Labeling

Describe the formulation, appearance, packaging, and labeling of the study intervention and control product, as supplied. Information in this section can usually be obtained from the IB or the package insert, or device labeling. This section should include the name of the manufacturer of the study intervention and control product.

AMT manufactures and provides the study intervention product. The BridlePro will be labeled as part of standard device labeling indicating the appropriate sized bridle based on the nasoenteric tube used.

9.3. Product Storage and Stability

Describe storage and stability requirements (e.g., protection from light, temperature, humidity) for the study intervention and control product. For studies in which multi-dose vials are utilized, provide additional information regarding stability and expiration time after initial use (e.g., the seal is broken).

The nasogastric tubes and nasal bridles will be stored in the supply room in each unit (7th Floor Sky Tower and PCCU).

9.4. Preparation

Describe the preparation of the study intervention and control product, including any preparation required by study staff and/or study participants. Include thawing, diluting, mixing, and reconstitution/preparation instructions in this section. For devices, include any relevant assembly or use instructions.

Device assembly of the BridlePro system per package instructions and training provided by AMT representative.

10. Study Intervention Additional Details

10.1. Measures to Minimize Bias: Randomization and Blinding

This section should contain a description of randomization and blinding procedures (if applicable to the study design). It should include a description or a table that describes how study participants will be assigned to study groups, without being so specific that blinding or randomization might be compromised. Plans for the maintenance of trial randomization codes and appropriate blinding for the study should be discussed. The timing and procedures for planned and unplanned breaking of randomization codes should be included. Include a statement regarding when unblinding may occur and who may unblind. Provide the criteria for breaking the study blind or participant code. Discuss the circumstances in which the blind would be broken for an individual or for all participants (e.g., for serious adverse evets (SAEs)). Indicate to whom the intentional and unintentional breaking of the blind should be reported.

Study participants will be randomized to the control or study arm using REDCap Randomization Module. Sealed envelopes will be locked in the PICU/PCCU where nasogastric tubes and bridles will be stored. When a patient meets criteria for the study, the study administrator will be notified, an envelope will be drawn to randomize the participant into one of the two groups and patient

information will be recorded in a log stored on a password protected UH computer share drive.

10.2. Study Intervention Compliance

Define how adherence to the protocol (e.g., administration of study intervention, use of device,) will be assessed, and verified (if applicable, e.g., plasma assays, electronic monitoring devices, daily diaries).

Study participants will be monitored daily to confirm if patient has had any dislodgements or has reported any issues with the placement of the securement method. Data will be collected in REDCap.

10.3. Permitted Concomitant Therapy

This section should be consistent with the medication restrictions in the inclusion/exclusion criteria previously listed. Describe how allowed concomitant therapy might affect the outcome (e.g., drug-drug interaction, direct effects on the study endpoints).

N/A

10.4. Rescue Medicine

List all medications, treatments, and/or procedures that may be provided during the study for "rescue therapy" and relevant instructions.

☒ *N/A, no rescue medicine*

11. Study Intervention Discontinuation

11.1. Discontinuation of Study Intervention

Describe the criteria for discontinuing the study intervention (e.g., halting rules), including any monitoring test(s) and associated clinical decision point(s). Include reasons for temporary discontinuation of the study intervention (e.g., type and quantity of adverse events), clearly stating the length of time, if applicable, and describe the data to be collected at the time of study intervention discontinuation and approaches for restarting administration of or re-challenging with study intervention.

The endpoint of the study is device removal (either intentionally at up to 30 days or inadvertently prior to that time.) If the tube is dislodged prior to end of needing a feeding tube the device will not be used on subsequent insertion/maintenance of the new feeding tube.

11.2. Continued Follow-up Discontinuation of Study Intervention

Describe efforts that will be made to continue follow-up of participants who discontinue the study intervention, but remain in the study for follow-up, especially for safety and efficacy study endpoints (if applicable). Reasonable efforts must be made to undertake protocol-specified safety follow-up procedures to capture adverse events (AE), serious adverse events (SAE), and unanticipated problems involving risks to subjects or others (UPIRSOs).

N/A – no follow up is performed after intervention is complete

12. Statistical Considerations

12.1. Statistical Hypotheses

State the formal and testable null and alternative hypotheses for primary and key secondary endpoints, specifying the type of comparison (e.g., superiority, equivalence or non-inferiority, dose response) and time period for which each endpoint will be analyzed.

Hypothesis: The use of a nasal bridle system will improve retention of nasoenteric feeding tubes in hospitalized children age 0-18 years of age.

Null hypothesis: The use of nasal bridle system will not improve retention of nasoenteric feeding tubes in hospitalized children age 0-18 years of age.

Time point: Analysis for duration of nasoenteric feeding tube requirement or until tube becomes dislodged but no longer than 30 days.

12.2. Sample Size Determination

Include number of participants to recruit, screen, and enroll to have adequate power to test the key hypotheses for the study. Provide all information needed to validate your calculations and judge the feasibility of enrolling and following the necessary number of participants.

Plan to enroll 30 patients in the study arm and 30 patients in the control arm.

12.3. Populations for Analyses

Clearly identify and describe the analysis datasets (e.g., which participants will be included in each).

Study group: patients with nasoenteric tubes secured using the AMT BridlePro
Control group: patients with nasoenteric tubes secured using adhesive tape

12.4. Statistical Analyses

Include analysis of primary efficacy endpoints, secondary endpoints, safety analyses, and any planned interim analyses

Primary endpoint: Tube dislodgment
Secondary endpoints: Time to dislodgment, number of follow up radiographs for tube replacement, cost of replacement tube and follow up radiographs, time of missed nutrition