



Assessment of total parenteral nutrition utilization and the development of a guideline for use in malnutrition

Julius Chang, Pharm.D., Timothy Lopez, Pharm.D., and Alice H. Robbins, Pharm.D., BCPS
 University Medical Center, Fresno, CA



INTRODUCTION

Total parenteral nutrition (TPN) therapy is necessary for patients whose gastrointestinal (GI) tract is nonfunctional or inaccessible. However, continuous use of TPN therapy has been associated with infectious, mechanical and metabolic complications, which can increase adverse events and overall hospital costs.¹ Therefore, the initiation of TPN therapy should be reserved for those patients who have a true indication for its use. The American Society of Parenteral and Enteral Nutrition (A.S.P.E.N.) published updated guidelines for parenteral therapy use in 2002.³ The primary purpose of this study is to review these guidelines along with current literature to develop a concise list of appropriate indications for TPN therapy. The secondary purpose is to assess outcomes of TPN therapy by evaluating changes in albumin and/or pre-albumin serum levels during TPN therapy. These analyses will be conducted at Community Regional Medical Center (CRMC), a private community hospital, and University Medical Center (UMC), an academic teaching facility, in Fresno, California.

OBJECTIVES

- Develop a guideline of appropriate TPN indications
- Assess appropriateness of TPN therapy
- Evaluate albumin and prealbumin levels for outcomes
- Educate medical staff regarding the new guideline
- Reassess appropriate use of TPN after education

METHODOLOGY

- A retrospective analysis of TPN therapy between 9/05 and 8/06
- A prospective analysis will be performed in 2/07

Inclusion criteria: Patients on TPN therapy
Exclusion criteria: Patients <18 yrs, receiving peripheral parenteral nutrition (PPN) therapy, or on concomitant enteral nutrition (EN)

General TPN Indication Considerations

TPN should be reserved for patients whose:

- GI tract is non-functional, severely diminished or inaccessible
- EN trial failed or when the risk of EN related complications is unacceptably high
- Disease state and the expected time of inadequate nutrition warrant TPN initiation
- Expected therapy is > 4 days

***See accompanying handout for a complete list of appropriate TPN indications**

Statistics

Statistical comparisons of the nominal and ordinal data were performed with Pearson's chi-square test and the independent t-test, respectively

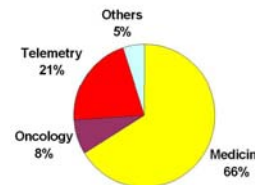
RESULTS

- A total of 207 subjects received TPN therapy and 178 subjects met inclusion criteria

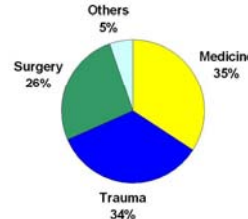
	UMC n=38	CRMC n=140	Total	p value
Female	12 (32%)	78 (56%)	90 (51%)	0.008
Age (yrs)	48.8 ± 16.3	58.5 ± 19.7	56.4 ± 19.4	0.006
Appropriate Indication	33 (87%)	108 (77%)	141 (79%)	0.19
Baseline AB	2.8 ± 0.36	3.1 ± 0.58	3.0 ± 0.57	
Baseline PAB	7.0 ± 4.9	8.4 ± 6.7	8.2 ± 6.4	
AB shift (95% CI)	0.18 (-0.14 to 0.49)	-0.15 (-0.23 to -0.07)	-0.13 (-0.2 to -0.05)	0.002
PAB shift (95% CI)	3.5 (-0.63 to 7.6)	5.9 (3.6 to 8.2)	5.6 (3.5 to 7.6)	<0.001
Baseline AB/PAB ordered	19 (50%)	130 (93%)	141 (78%)	
Days on TPN	10.9 ± 11.8	9.43 ± 8.9	9.74 ± 9.6	0.41

Plus-minus values are means ± standard deviation
 CI denotes confidence interval
 AB denotes albumin
 PAB denotes prealbumin

CRMC Patients on TPN by Service



UMC Patients on TPN by Service



CONCLUSION

- The combined appropriateness rate was 79%.
- The rate of appropriateness at UMC is higher than what is reported in the literature for hospitals without a multidisciplinary nutrition support team.⁴
- Medicine, Trauma, and Surgery represented most of the TPN prescribing. Our education component of this project will initially focus on these services.
- The decrease in albumin and the increase in prealbumin at the end of TPN therapy were both statistically significant. However, clinical outcome was not assessed during this study, and cannot be correlated with these results.⁵
- Lack of a standardized laboratory order form may account for large percentage of missing baseline data at UMC.

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Study of Myers Briggs Type Indicator Personality Profiling in Specialty Clinical Pharmacists

Jeffrey Chiu, Pharm.D., Philippe A. Mentler, Pharm.D., Michelle Chang, Pharm.D.

University Medical Center, Fresno, CA



INTRODUCTION

Personality type may have an important role in career choices. Using the Myers-Briggs Type Indicator (MBTI) instrument researchers have found correlations between medical specialties and personality type. In 1991, Saline found 2 personality types, ESFJ and ISFJ, prevailing in dental hygiene students differed from a random sample of the general population.¹ In 2005, Boyd R. et al. concluded that emergency department (ED) senior medical staff were inclined to be introverted 48.5%, intuitive 58.8%, thinking 58.8%, and judging 77.9% suggesting a difference in personality type from the general population.² Stilwell et al. compared MBTI results of medical students from 1950 to medical students in 2000 and concluded that the MBTI type distribution remained consistent.³ These results indicate that the MBTI is a reliable and reproducible tool for assessing personality type within the medical field. Although studies have evaluated pharmacist personality types, few have evaluated whether a correlation exists between a pharmacist's personality type and their choice in specialty practice.⁷

OBJECTIVE

To determine if a correlation exists between a pharmacist's personality type, identified by the MBTI, and their chosen pharmacy specialty.

METHODOLOGY

Subjects

Pharmacists associated with ASHP accredited residency programs in the United States.

Inclusion criteria:

- Licensed pharmacists practicing within a hospital, retail, or industry setting.
- Pharmacists with ≥1 year of practice in their specialty practice setting.
- Full-time pharmacists with ≥40 hour work weeks.

Exclusion criteria:

- Pharmacy interns, residents, and non-licensed pharmacists.
- Pharmacist with multiple specialty areas of practice.
- Pharmacy practice specialties unique and limited to single facilities.

Data Collection

- **Phase I:** IRB approval & grant proposal submission – Complete
- **Phase II:** Enrollment – Pending
- **Phase III:** Data collection – Pending
- **Phase IV:** Personality classification – Pending
- **Phase V:** Final data analysis - Pending

MYERS BRIGGS

Myers Briggs Type Indicator

Consists of 93 forced-choice questions (i.e., only two options available). The test will be scored to identify which dichotomy the participant prefers. Participants will be classified into one of 16 personality classes.

Dichotomies	
Extraversion	Introversion
Sensing	Intuition
Thinking	Feeling
Judging	Perceiving

Fig 1. A dichotomy is a division of two mutually exclusive groups, or in this case, type preferences.

- **Extroverts/Introverts:** describes attitudes, and how persons orient and receives energy
- **Sensing/Intuition:** perceiving functions
- **Thinking/Feeling:** decision-making functions
- **Judging/Perceiving:** orientation functions

Personality Classes			
ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Fig 2. Organization of the sixteen classes.

CONCLUSION

- This information may provide direction for future participants towards their field of pharmacy study and lead to aid in specialty decision making.
- MBTI test could be given to pharmacy students and residents to guide them in their decisions on clinical rotations and specialty residency choices.
- Results could help future pharmacists identify career paths in the field that would enhance career fulfillment, thereby increasing the retention of professionals in the field.
- Results of this study is pending.

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Treatment outcomes of resistant *Acinetobacter baumannii* with tigecycline and colistimethate

Mark Danek, Pharm.D. and Marisa N. Mendez, Pharm.D.
University Medical Center, Fresno, California



BACKGROUND

The development of multidrug resistant (MDR) strains of *Acinetobacter spp.* has led to the evaluation of older, less commonly utilized antibiotics as therapeutic alternatives¹⁻⁴. The safety and efficacy of colistimethate for the treatment of *Acinetobacter spp.* has been studied in the intensive care unit¹. This evaluation suggested that treatment of sepsis caused by *Acinetobacter spp.* with colistimethate was safe and equally as effective as other antimicrobial agents¹. The evolution of MDR *Acinetobacter spp.* has also led to the investigation of newer antibiotic agents as potential therapeutic alternatives. Tigecycline, a glycycline, has demonstrated activity versus *A. baumannii*^{5,6}. Currently, there is little data regarding the use of tigecycline⁷, alone or in combination with colistimethate, for the treatment of resistant *A. baumannii* infections.

OBJECTIVE

The objective of this study is to evaluate the efficacy of tigecycline and colistimethate therapy in resistant cases of *Acinetobacter spp.* infections.

METHODOLOGY

- **Retrospective review**
 - 09/01/05 – 02/28/07
- **Inclusion Criteria**
 - Microbiologically confirmed MDR *Acinetobacter baumannii*
 - Received colistimethate or tigecycline therapy alone or in combination for at least 7 days
- **Exclusion Criteria**
 - Pregnant women
 - Known hypersensitivity to colistimethate or tigecycline
- **Data to be collected**
 - Patient demographics
 - Antimicrobial usage and duration
 - Microbiological cultures and sensitivities
 - White blood cell count, sputum production, ventilator status, and imaging studies
- **Outcome Measures**
 - **Microbiologic cure**
 - Resolution of infection as per repeat negative microbiologic culture accompanied by normalization of leukocyte count, temperature, and clinical improvement.
 - **Clinical cure**
 - Resolution of infection without repeat negative microbiologic culture confirmed by normalization of leukocyte count, temperature, and clinical improvement.
 - **Treatment failure**
 - Inability to achieve microbiologic or clinical cure following antimicrobial therapy or patient expiration during the treatment period.

RESULTS

Patient Demographics

Males (%)	n = 7 (58%)
Females (%)	n = 5 (42%)
Average (Avg) Age	54.7 yrs
Avg Length of Therapy (days)	
• Colistimethate	11.3
• Tigecycline	10.8
• Combination	11.1

Site of Infection

Treatment Groups

Results

Success vs Failure

	Microbiologic Cure	Clinical Cure	Treatment Failure	Treatment Failure & Death
Colistimethate	1	1	-	1
Tigecycline	2	-	-	2
Combination	1	1	1	3

CONCLUSION

Many of the patients included in this study were severely ill and had multiple co-morbidities. Despite the number of failures noted, preliminary data suggests that the use of colistimethate or tigecycline alone or in combination may be an effective therapeutic option for the treatment of MDR *Acinetobacter baumannii* infections. Further collection and analysis of data is currently underway.

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DISCLOSURE

The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities.