



## Student Research Week 2020

*Congratulations*

### Congratulations to Award Winners from the School of Nursing!

**1<sup>st</sup> Place: Ashley James, BSN, RN and Julie Vereen, BSN, RN**

Title of Poster: Implantable Cardioverter Defibrillators: Their Impact on Quality of Life

**2<sup>nd</sup> Place: Matt Ellis and Troy Faulkner**

Title of Poster: Corneal Abrasion Management Guidelines

**3<sup>rd</sup> Place: Elana Sherwood and Janelle Calloway**

Title of Poster: Best Practice: Adolescent Substance Abuse Disorder

Thank you to all judges who participated: Cathy Lovett, Ann Hagstrom, Amy Boothe, and Patti White

# 1<sup>st</sup> Place Winners:



## Implantable Cardioverter Defibrillators: Their Impact on Quality of Life

Ashley James, BSN, RN and Julie Vereen, BSN, RN  
Texas Tech University Health Sciences Center



TEXAS TECH UNIVERSITY  
HEALTH SCIENCES CENTER.  
School of Nursing

### Introduction

- The purpose of this research is to evaluate and appraise multiple studies with various levels of evidence to determine if an implantable cardioverter defibrillator is effective in improving quality of life in older adults with ischemic heart disease. Our research was guided by the following PICOT question: In older adults with ischemic heart disease (P), how does the implantable cardioverter defibrillator (ICD) (I) as compared to medical treatment without an ICD (C) improve quality of life (QoL) (O) in 6 months (T)?

### Background Questions:

- What are the recommendations needed to determine candidacy for an ICD?
- How does an ICD impact QoL?
- How does alternative medical treatment without an ICD improve QoL?
- What is the preferred method of treatment to improve QoL for ischemic heart disease?

### Foreground Questions:

- In older adults, how does an ICD compared to alternative medical therapies impact QoL?
- In older adults with ischemic heart disease, what is the best approach to improve QoL?
- Our literature search identified four different studies to best answer the PICOT question: a randomized control trial (RCT) (Level II), a qualitative study (Level VI), a clinical practice guideline (Level VII), and a systematic review (Level I).

### Appraisal of the Evidence

#### Consistency

- All four research studies discussed QoL for patients with an ICD, but not all compared or discussed alternative medical therapies.
- A common theme or intervention compared QoL in patients receiving a shock to those who had not.
- In the RCT, a web-based intervention was used to compare shock related anxiety in ICD patients and improve QoL as compared to usual care (Yardimci and Mert, 2017).
- The qualitative study evaluated the lived experiences in patients with an ICD (Humphreys, Lowe, Rance, and Bennett, 2016).
- The objective of the systematic review was to explore the QoL in patients with an ICD compared to those receiving medical treatment; however, ICDs provide survival advantage over medical treatment, and randomization allocation of implementation of an ICD and medical treatment may be unethical (Tomzik, Koltermann, Zabel, Willich, and Reinhold, 2015).
- The systematic review and clinical practice guideline were consistent in concluding that there are no common trends or significant impacts of ICDs improving QoL.

#### Effectiveness

- Interventions for ICDs include: education on size of device, shock force, lifestyle modifications, physical appearance, and psychological support.
- These interventions can decrease anxiety and better prepare individuals who require an ICD.
- In the RCT, there was no overall significant difference in QoL scores in the intervention and control groups from a web-based intervention (Yardimci and Mert, 2017).
- In the qualitative study, all participants reported experiencing multiple losses leading to anxiety and depression from a cardiac arrhythmia resulting in an ICD (Humphreys, Lowe, Rance, and Bennett, 2016).

- The systematic review identified no consensus in regards to ICDs improving QoL (Tomzik et al., 2015).
- Due to no common trend identified in QoL of patients who receive ICDs, patient education is recommended in all studies to support providers in clinical practice.
- Conclusions made from synthesis of the literature suggest there is no significant effect of an ICD improving QoL; however, due to the small amount of studies and various designs and limitations, the current trend is not considered firm and remains to be reproduced.

#### Patient Preferences and Values

- There is no discussion by the authors of patient preferences and values across all research studies.
- Patient preferences were not discussed due to ICDs provide survival advantage over medical treatment and would be unethical to randomize individuals from implementation of ICD and medical treatment (Tomzik et al., 2015).

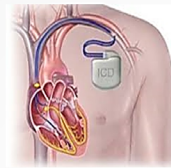


### Recommendations for Best Nursing Practice

- According to the evidence-based practice guideline, an ICD is recommended if chance of survival is greater than one year in patients who have a left ventricular ejection fraction of 35% or less from ischemic heart disease, 40 days post myocardial infarction, 90 days past revascularization and have a function status of New York Heart Association classification of II or III extent of heart failure (Al-Khatib et al., 2018).
- ICDs have not shown a significant impact on improving QoL in RCT studies (Al-Khatib et al., 2018).
- Selection for an ICD must be individualized to the patient and education on positive and negative effects is needed (Al-Khatib et al., 2018).

### References

- Al-Khatib, S. M., Stevenson, W. G., Askew, M. J., Bryant, W. J., Callans, D. J., Curtis, A. B., ... Page, R. L. (2018). 2017 AHA/ACC/HRS guideline for management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: A report of the American College of Cardiology Foundation/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *Circulation*, 138, 272–391. doi: 10.1161/CTR.0000000000000549.
- Humphreys, N. K., Lowe, R., Rance, J., & Bennett, P. D. (2016). Living with an implantable cardioverter defibrillator: The patients' experience. *Heart & Lung*, 45(1), 34–40. doi: 10.1016/j.hrtlg.2015.10.001
- Tomzik, J., Koltermann, K. C., Zabel, M., Willich, S. N., & Reinhold, T. (2015). Quality of life in patients with an implantable cardioverter defibrillator: A systematic review. *Frontiers in Cardiovascular Medicine*, 2. doi: 10.3389/fcvm.2015.00034
- Yardimci, T., & Mert, H. (2017). Web-based intervention to improve implantable cardioverter defibrillator patients' shock-related anxiety and quality of life: A randomized controlled trial. *Clinical Nursing Research*, 28(2), 150–164. doi: 10.1177/1054773817741427



# 2nd Place Winners:



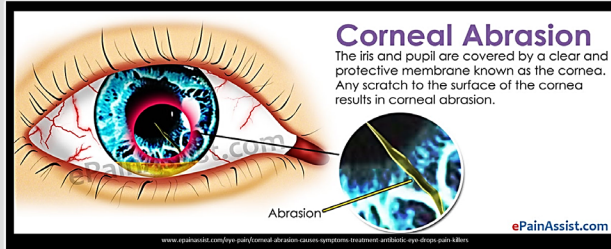
## Corneal Abrasion Management Guidelines

Matt Ellis & Troy Faulkner

Texas Tech University Health Sciences Center



TEXAS TECH UNIVERSITY  
 HEALTH SCIENCES CENTER.  
 School of Nursing



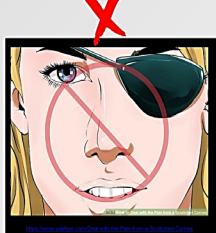
### Introduction

Patching for corneal abrasions has been a treatment for decades. Is this practice outdated or is patching still an effective treatment method for eye injuries?

**PICOT Question:** In adults with corneal abrasions (P), does the use of an eye patch over the injured eye, along with antibiotic ointment (I), compared to using antibiotic ointment alone (C), heal the abrasion faster and (O) within a 72 hour period (T)?

**Foreground Questions:** In adults with a non-infected corneal abrasion, how does the use of an antibiotic ointment and a patch, compare to just using an antibiotic ointment, decrease healing time? Does the use of an eye patch for corneal abrasions delay healing time?

**Background Questions:** In adults with a non-infected corneal abrasions, what is the best nursing practice to treat this injury? Is using an eye patch for corneal abrasions still an effective method of treatment?



### Appraisal of the Evidence

#### Consistency

- Consistency:
- (Menghini, 2013)
    - No difference in patch and no patch groups
    - Treat according to patient needs and preferences
  - (Kaiser, 1995), (Lim, 2015), (Ross, 2017)
    - Recommend use of antibiotic ointment
    - Patch is outdated practice and may delay healing time
  - Recommendations consistent across all four studies
  - All four articles suggested patching is inadequate current practice
  - No contradictions identified

#### Effectiveness

- Results & Findings
- Level of evidence adequate for practice adjustments
  - Eye Patch + Antibiotic
    - No increased benefits of patching<sup>1,2,3,4</sup>
    - Patching increases risk for infection<sup>1</sup>
      - Increase corneal temperature
      - Delay healing process<sup>1,2</sup>
      - Decrease corneal oxygenation<sup>1</sup>
  - Antibiotic Only
    - Healing time decreased<sup>2,3</sup>
    - Antibiotic compliance increased<sup>1</sup>
      - Easy access to eye
      - Patient comfort increased

#### Patient Preferences and Values

- (Kaiser, 1995), (Lim, 2015), (Ross, 2017)
  - Studies implied patient comfort as directive for treatment
  - Patients prefer no patch
  - Easy access to eye
  - No monocular vision complications
  - Social stigmatization concerns with patch
  - Most patients complained of foreign body sensation
  - 33 patients out of 153 removed patch due to discomfort or securement complications
- (Menghini, 2013)
  - Eye patch use dependent on needs & preferences of the patient
    - Protect injured eye from airborne foreign bodies and sunlight exposure

### Recommendations for Best Nursing Practice

**PICOT Result:** Patching the affected eye for corneal abrasion injuries does not heal the abrasion faster, and may actually lead to increased pain and increased probability of complications in the healing process

- Avoid patching eye
- NSAID drops for analgesia not recommended
- Bandage contact lens for pain control
- Ophthalmology consult recommended for deep abrasion, recurrent erosion syndrome, or signs of infection
- Good antibiotic stewardship
  - Prophylactic 2nd gen. fluoroquinolone topical antibiotics recommended for non-contact wearers
  - 4th gen. Fluoroquinolone drops for contact wearers
- Patient education
  - Seek medical attention if symptoms persist for more than three days, increased drainage, vision loss, pain out of proportion to injury, or signs of worsening condition
  - Use extra caution when driving vehicles or operating machinery
  - Avoid scratching or touching the eye and contact lenses until approved by physician
  - Utilize eye protection glasses as necessary
  - May have decreased depth perception
  - Administer prescribed medicines as directed



### References

1. Kaiser, P. (1995). A Comparison of Pressure Patching versus No Patching for Corneal Abrasions due to Trauma or Foreign Body Removal. *Ophthalmology*, 1936-1942.
2. Lim, C., Turner, A., & Lim, B. (2016). Patching for corneal abrasion (Review). *Cochrane Database of Systematic Reviews*, 1-63. <http://dx.doi.org/10.1002/14651858.CD004764.pub3>
3. Menghini, M. K. (2013). Treatment of Traumatic Corneal Abrasions: A Three-Arm, Prospective, Randomized Study. *Ophthalmic Research*, 13-18.
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# 3rd Place Winners:



## Best Practice: Adolescent Substance Abuse Disorder Elana Sherwood and Janelle Calloway Texas Tech University Health Sciences Center



### Introduction

#### PICOT

In adolescents with substance abuse disorders (P), how will nursing interventions such as counseling and active listening (I) compared to daily medication administration (C) affect behavior (O) over a 12 week period (T)?

#### Background

- What defines substance abuse in adolescents?
- What are the clinical manifestations of substance abuse?
- How much use of a substance classifies an abuse disorder?
- What current screening approaches are being used?
- **Foreground**
- What is the best approach in prediction of substance abuse in adolescents?
- Is psychiatric treatment and parental interventions more effective than medication administration in the treatment of substance abuse disorders in adolescents?

### Appraisal of the Evidence

#### Consistency

- The research methods all involved testing a counseling therapy (12-Step, Addiction Comprehensive Health Enhancement Support System (ACHES), and parenting interventions) to determine abstinence from substances.
- The goal of all the studies was to determine an intervention to achieve abstinence from substance abuse.
- The interventions are consistent across the studies.
- The specific counseling intervention being tested (12-Step, ACHES, and effective parenting intervention, Cognitive Behavior Therapy).
- Outcomes suggest that interventions involving counseling are effective at reducing incidence of substance abuse relapse in adolescents.
- The guideline points out that the use of pharmacological interventions has not been thoroughly tested in adolescents and counseling should be priority.

### Effectiveness

#### Interventions

- 12-Step Facilitation (ITSF) treatment program designed to increase days of abstinence and increase attendance
- Parenting interventions of monitoring, discipline, communication, and qualities of parent-youth relationships
- Addiction Comprehensive Health Assessment (ACHES) in an intensive outpatient program offers a continuity of care through mobile apps and the ability to foster a virtual supportive access from anywhere at anytime.

#### Effectiveness of Interventions

- All of the interventions tested were effective in verifying the best current practice using interpretation of statistical analysis

#### Outcomes

- ITSF patients had a greater 12-step attendance and provides an option that is comparable with existing practices
- Low- intensity group parenting interventions are effective in reducing and preventing adolescent substance abuse
- ACHES provided utility in facilitating client and therapist communication and helped to leverage the construction of long-term relationships to avoid high-risk relapses.

#### Level of Evidence

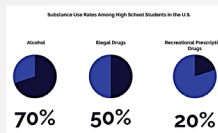
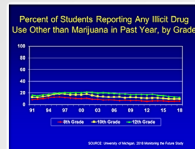
- Level I Systematic Review and Clinical Practice Guideline, Level II RCT, and Level V Peer Review were appraised and supported findings in clinical practice.

#### Conclusions

- Current recommendations for treatment of substance abuse disorders in adolescents are combining multiple programs and therapies to help achieve current and long term success.
- Programs and counseling are still the preferred treatment over medication therapy in adolescents without severe withdrawal symptoms.

### Patient Preferences and Values

- In all the studies the authors considered a degree of patient preferences in terms of at least one of the following
  - Cultural considerations
  - Time needed to participate in study/ intervention
  - Socioeconomic considerations
  - Patient/ Family Motivation



Know the Signs of Underage Drinking and Drug Use		
Mood Changes	Decreased Interest in Activities	Changes in Health
Personality Changes	Increased Secrecy and Lying to Family/Friends	Personal Time That is Unaccounted For
	Changes in Patterns with Friends	

### Recommendations for Best Nursing Practice

- Counseling should be a priority for adolescents suffering from substance abuse because prolonged counseling therapy has been shown to reduce incidence of substance abuse relapse.
- Counseling includes cognitive behavior therapy, 12-step, ACHES, and parenting interventions.
- Pharmacological therapies are indicated in situations of withdrawal.

### References

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Gaur N, Gautman, Singh S, Raju W, Sarkar S. Clinical Practice Guidelines on Assessment of Substance Abuse Disorder in Children and Adolescents. *Indian J Psychiatry* 2019; doi:61.333-49.

Hussey, D., & Flynn, K.C. (2019). The Utility and Impact of the Addiction Comprehensive Health Enhancement Support System (ACHES) on Substance Abuse Treatment Adherence Among Youth in Intensive Outpatient Program. *Psychiatry Research*, 281, 1-7. doi: 10.1016/j.psychres.2019.112580.

Kelly, J. F., Kaimer, Y., Kahler, C. W., Hoepfner, B., Yeterian, J., Cristello, J. V., & Timko, C. (2017). A Pilot Randomized Clinical Trial Testing Integrated 12-Step Facilitation (ITSF) Treatment for Adolescent Substance Abuse Disorder. *Addiction*, 112 (12), 2155-2166. doi: 10.1111/add.13920.