

## Palliative Care and Hospice Research Updates from 2017-2018

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*Patrick White M.D.* has financial interests to disclose.  
Potential conflicts of interest have been resolved.

- Research Support / Grants
  - Delta Distinguished Scholar Research Award
- Stock/Equity (any amount)           N/A
- Consulting / Employment            N/A
- Speakers Bureau / Honoraria
- Heron Therapeutics Advisory Board

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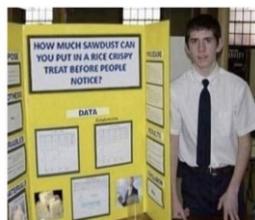
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### Objectives

- Identify 10 of the most clinically relevant research studies conducted in 2017-2018
- Describe ways these studies could be applied to improve the way you deliver palliative care.
- Avoid putting you to sleep and point out shady work



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## Methods

- Summarize the key scientific presentations of the year and focus only on either clinically relevant points or information for promoting palliative care
  - AAHPM "State of the Science"
  - "PC-FACS: A Year in Review"
  - "Speed Dating with Pharmacists"




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## Preventing Urinary Tract Infections

**D-mannose powder for prophylaxis of recurrent urinary tract infections in women: a randomized clinical trial**

Kranjčec B, Papeš D, Altarac S

Published: 20 February 2014; accepted: 20 April 2014; published online: 19 April 2014

**Abstract** To evaluate whether D-mannose powder is effective in preventing recurrent urinary tract infections (UTIs) in women, we conducted a randomized clinical trial. The study included 308 women with a history of recurrent UTIs. They were randomized to receive either D-mannose powder (2g daily in 200mL water) or a placebo (50mg daily). The primary endpoint was the number of UTIs over a 12-month period. The D-mannose group had significantly fewer UTIs compared to the placebo group. Side effects were minimal and similar in both groups. D-mannose powder is a safe and effective option for preventing recurrent UTIs in women.

Kranjčec B, Papeš D, Altarac S. D-mannose powder for prophylaxis of recurrent urinary tract infections in women: a randomized clinical trial. *World J Urol.* 2014 Feb;32(1):79-84.

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## D-mannose Powder for Prophylaxis of Recurrent Urinary Tract Infections in Woman: A Randomized Clinical Trial

### What They Did

- They took 308 women with recurrent cystitis and randomized them into 3 groups:
  - D-mannose (2g daily in 200mL water)
  - Nitrofurantoin (50mg daily)
  - Placebo

### Why It Matters

- Overall 32% of patients had a UTI including:
  - 61% of patients in the control group
  - 20% in the nitrofurantoin group
  - 15% in the D-mannose group
- D-mannose had a better side-effect profile than nitrofurantoin
- D-mannose is less than \$20 for a month's supply

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## Conclusion

- Although we can never get too excited based off one small study . . .
- Based on efficacy and cost in this world of increasing antibiotic resistance we have a new antimicrobial hero!
- I have started recommending this to my clinical team




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## What is the Benefit of Calcium Supplementation Especially to Patients with Life-Limiting Illnesses



Zhao JG, Zeng XT, Wang J, Liu L. Association Between Calcium or Vitamin D Supplementation and Fracture Incidence in Community-Dwelling Older Adults: A Systematic Review and Meta-analysis. JAMA. 2017 Dec 26;318(24):2466-2482

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## Association Between Calcium or Vitamin D Supplementation and Fracture Incidence in Community-Dwelling Older Adults: A Systematic Review and Meta-analysis

### What They Did

- Meta-analysis of 33 randomized clinical trials containing over 51,000 patients
- Primary outcome was rate of hip fracture
- Secondary outcomes included: vertebral fractures, nonvertebral fractures, and total fractures

### Why It Matters

- No association found between calcium and vitamin D supplementation and either hip fracture, vertebral fracture, nonvertebral fracture, or total fracture

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### Association Between Calcium or Vitamin D Supplementation and Fracture Incidence in Community-Dwelling Older Adults: A Systematic Review and Meta-analysis

#### Conclusions

- In this meta-analysis of randomized clinical trials, the use of supplements that included calcium, vitamin D, or both compared with placebo or no treatment was not associated with a lower risk of fractures among community-dwelling older adults.

#### My Conclusions




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### Benefits and Burdens of Codeine



Ryste ST, Engelsen BA, Naess H. Codeine is associated with poor prognosis in acute stroke. Brain Behav. 2017 Nov 19;7(12):e00869.

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### Codeine is Associated With Poor Prognosis in Acute Stroke.

#### What They Did

- Observational study using stroke registry examining 921 patients with either ischemic stroke, hemorrhagic stroke, or transient ischemic attack
- Examined opioid use within 48 hours after stroke and assessed for complications during acute hospitalization

#### Why It Matters

- Patients receiving codeine containing opiates were associated with an increased risk of pneumonia (OR 3.8)
- Patients receiving codeine containing opiates had increased risk of worsening stroke symptoms (OR 2.7)
- There was no relationship between any of the other opiates and complications or worse outcomes post stroke

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## Codeine is Associated With Poor Prognosis in Acute Stroke.

### Conclusions

Use of codeine-containing analgesics is associated with a poorer short-term prognosis and an increased occurrence of complications in the acute phase after a stroke. The highly significant findings suggest that codeine has a negative effect on acute stroke patients.

### My Conclusions



Rysete ST, Engelsen BA, Naess H. Codeine is associated with poor prognosis in acute stroke. Brain Behav. 2017 Nov 19;7(12):e00869.

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## How Effective Is CPR on Meaningful Outcomes



Effect of Bag-Mask Ventilation vs Endotracheal Intubation During Cardiopulmonary Resuscitation on Neurological Outcome After Out-of-Hospital Cardiorespiratory Arrest: A Randomized Clinical Trial. JAMA. 2018;319(6):779-787.

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## Effect of Bag-Mask Ventilation vs Endotracheal Intubation During Cardiopulmonary Resuscitation on Neurological Outcome After Out-of-Hospital Cardiorespiratory Arrest: A Randomized Clinical Trial

### What They Did

- Multicenter randomized clinical trial comparing BMV with ETI in 2043 patients without-of-hospital cardiorespiratory arrest
- Occurred in France and Belgium between 2015-2017.
- Primary outcome was a favorable neurologic status at 28 days, secondary outcomes included both survival to hospital admission and discharge

### Why It Matters

- Favorable functional survival at day 28 was 44 of 1018 patients (4.3%) in the BMV group and 43 of 1022 patients (4.2%) in the ETI group.

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Table 2. Secondary Outcomes in Patients Included in the Study

Outcome	No. of Patients (%)		Proportion Difference, BMV(%) - ETI(%) (95% CI)	P Value <sup>a</sup>
	BMV Group	ETI Group		
Intention-to-Treat Population	n = 1018	n = 1022		
Survival at 28 d	55 (5.4)	54 (5.3)	0.1 (-1.8 to 2.1)	.90
<b>CPCs<sup>b</sup></b>				
1, Good cerebral performance	35 (3.4)	37 (3.6)		
2, Moderate cerebral disability	9 (0.9)	6 (0.6)		
3, Severe cerebral disability	4 (0.4)	7 (0.7)		.68
4, Coma or vegetative state	7 (0.7)	4 (0.4)		
5, Death	963 (94.6)	968 (94.7)		
Survival to hospital admission	294 (28.9)	333 (32.6)	-3.7 (-7.7 to 0.3)	.07
Return of spontaneous circulation	348 (34.2)	397 (38.9)	-4.7 (-8.8 to -0.5)	.03
<b>Per-Protocol Analysis</b>				
Survival at 28 d	n = 995	n = 943		
	54 (5.4)	51 (5.4)	0.1 (-1.0 to 0.9)	.99
<b>CPCs<sup>b</sup></b>				
1, Good cerebral performance	35 (3.5)	34 (3.5)		
2, Moderate cerebral disability	8 (0.8)	6 (0.6)		
3, Severe cerebral disability	4 (0.4)	7 (0.7)		.76
4, Coma or vegetative state	7 (0.7)	4 (0.4)		
5, Death	941 (94.6)	892 (94.6)		
Survival to hospital admission	289 (29.1)	312 (33.1)	-4.0 (-7.6 to 0.6)	.055
Return of spontaneous circulation	342 (34.4)	377 (30.0)	-5.6 (-9.9 to -1.3)	.01

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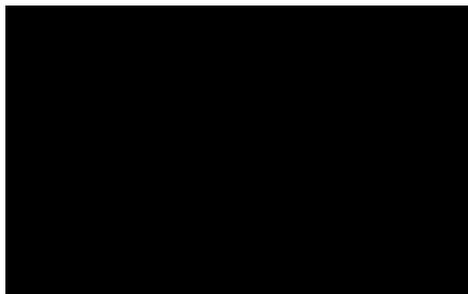
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## James Bond's CPR Skills Casino Royale



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## James Bond's CPR Skills Casino Royale



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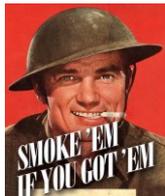


## Epidemiological characteristics, safety and efficacy of medical cannabis in the elderly.

### Conclusions

- The study concluded therapeutic use of cannabis is safe and efficacious in the elderly population.
- Cannabis use may decrease the use of other prescription medicines, including opioids.
- More research is needed including randomized clinical trials is clearly needed

### My Conclusions



Abuhasira R, Schleider LB, Mechoulam R, Novack V. Epidemiological characteristics, safety and efficacy of medical cannabis in the elderly. Eur J Intern Med. 2018; 49:44-50.

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## Glucose Control at End-of-Life

Characteristic	Number of Patients (n)	Mean (SD)	Median (IQR)
Age (years)	100	78.5 (6.5)	79 (73-84)
Female (%)	100	65	65
White (%)	100	75	75
Black (%)	100	25	25
Hispanic (%)	100	10	10
Other (%)	100	10	10
Diabetes duration (years)	100	12.5 (8.5)	10 (5-15)
Insulin use (%)	100	85	85
Severe hypoglycemia (%)	100	15	15
Hyperglycemia (%)	100	10	10

Petrillo LA, Gan S, Jing B, Lang-Brown S, Boscardin WJ, Lee SJ. Hypoglycemia in Hospice Patients With Type 2 Diabetes in a National Sample of Nursing Homes. JAMA Intern Med. 2018; 1178(5):713-715.

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## Hypoglycemia in Hospice Patients With Type 2 Diabetes in a National Sample of Nursing Homes

### What They Did

- Retrospective cohort study of 20,329 patients in VA hospital system over 65 years old with DM II who had been hospitalized
- Primary outcome of hypoglycemia (glucose <70) with secondary outcomes severe hypoglycemia (BG <50) and hyperglycemia (BG > 400)

### Why It Matters

- 1 in 9 nursing home patients with type 2 diabetes experienced hypoglycemia (glucose <70 mg/dL) while 1 in 20 experienced severe hypoglycemia (glucose <50mg/dL) while on hospice.
- The risk of hypoglycemia was highest among patients treated with insulin, 1/3 of whom experienced hypoglycemia
- The cumulative incidence of hyperglycemia (glucose >400 mg/dL) at 180 days was 9% in all patients,

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## Hypoglycemia in Hospice Patients With Type 2 Diabetes in a National Sample of Nursing Homes

### Conclusions

- Hypoglycemia is still a major challenge in patients with life-limiting illness cared for in nursing homes. Hypoglycemia is actually more prevalent than hyperglycemia as defined in this study.
- Clinicians need to be vigilant in reducing diabetes medication in patients with DM II with very poor prognoses

### My Conclusions



Petrillo LA, Gan S, Jing B, Lang-Brown S, Boscardin WJ, Lee SJ. Hypoglycemia in Hospice Patients With Type 2 Diabetes in a National Sample of Nursing Homes. *JAMA Intern Med.* 2018; 1;178(5):713-715. **B/C | THE WORLD'S BEST MEDICINE. MADE BETTER.** 25

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## Evidence-Based Ways to Evaluate Cognitive Status

### JDI Journal of Diabetes Investigation ORIGINAL ARTICLE

#### Predicting the ability of elderly diabetes patients to acquire the insulin self-injection technique based on the number of animal names recalled

**Background:** The purpose of this study was to determine if the number of animal names recalled by elderly diabetes patients was a predictor of their ability to acquire the insulin self-injection technique within 1 week.

**Methods:** A prospective study was conducted in which 57 elderly Japanese patients with type 2 diabetes were enrolled. The number of animal names recalled by each patient was recorded. The patients were then instructed in the insulin self-injection technique. The number of patients who successfully acquired the technique within 1 week was recorded.

**Results:** The number of animal names recalled was significantly correlated with the number of patients who successfully acquired the insulin self-injection technique within 1 week. The area under the curve was 0.87, 95% confidence interval 0.76–0.97,  $P < 0.01$ .

Minami T, Yamada M, Furuta R. Predicting the ability of elderly diabetes patients to acquire the insulin self-injection technique based on the number of animal names recalled. *J Diabetes Investig.* 2017. **B/C | THE WORLD'S BEST MEDICINE. MADE BETTER.** 26

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## Predicting the ability of elderly diabetes patients to acquire the insulin self-injection technique based on the number of animal names recalled

### What They Did

- They prospectively enrolled 57 Japanese patients and compared their Mini-Mental State Examination to Verbal Fluency Tests (including animal recall)

### Why It Matters

- Multivariate logistic analysis showed that the number of animal names recalled was the most reliable predictor of the ability to acquire the insulin self-injection technique within 1 week.
- A figure of 11 animal names predicted a successful acquisition, with a sensitivity of 73% and a specificity of 91% being observed (area under the curve 0.87, 95% confidence interval 0.76–0.97,  $P < 0.01$ ).

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### Predicting the ability of elderly diabetes patients to acquire the insulin self-injection technique based on the number of animal names recalled

#### Conclusions

- The number of animal names recalled in 1 min was the most useful indicator of the ability of elderly diabetes patients to learn to manage insulin self-injection therapy within 1 week. The cut-off value was 11 animal names.

#### My Conclusions



Minami T, Yamada M, Furuta R. Predicting the ability of elderly diabetes patients to acquire the insulin self-injection technique based on the number of animal names recalled. J Diabetes Investig. 2017.

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### How Useful Are Topical Antimicrobials?



Mankowitz SL. Laceration Management. J Emerg Med. 2017 Sep;53(3):369-382

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### Laceration Management

#### What They Did

- Reviewed the literature on wound healing. Previously one study had shown benefits of antimicrobials but questions have emergency if it was simply a moist environment vs the antimicrobial.

#### Why It Matters

- In a study comparing white petrolatum ointment to bacitracin, there was no significant difference in wound infection rate (2% vs. 0.9%;  $p = 0.37$ ).
- In a different study, 30 patients were identified who had to have two elective, sterile excisional procedures on the same day. In each patient, one wound was covered with antibiotic and the other with white petrolatum. There was no significant difference seen in wound healing between the two groups.

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## Laceration Management

### Conclusions

- Most topical wound agents are of limited benefit and a petrolatum ointment may be as effective as a topical antimicrobial
- These are small studies and little evidence exists either way.

### My Conclusions



Mankowitz SL. Laceration Management. J Emerg Med. 2017 Sep;53(3):369-382

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## Best Study 2017-2018



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