Psychiatric Diagnosis and Medications After Critical Illness

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Conflicts & Funding

• No conflicts of Interest

• Funding
  CIHR
  Heart & Stroke Foundation

Gyroscope – A Survival of Sepsis by Gary Black
Post Intensive Care Syndrome (PICS)

Improving long-term outcomes after discharge from intensive care

![Diagram of PICS]

Figure 1. Postintensive care syndrome (PICS) conceptual diagram. ASD, acute stress disorder; PTSD, posttraumatic stress disorder.

**Results:** Fourteen studies were eligible. The median point prevalence of

Posttraumatic stress disorder (PTSD) in ICU survivors:

- 22% (n=1104), and the median point included prior psychopathology, great experiences, Female sex and younger
Are these ‘new’ psychiatric diagnoses for patients?

Hospitalization-Associated Disability

“She Was Probably Able to Ambulate, but I’m Not Sure”

Davidow, et al., Am J of Ger Psych 2013

Depression After Severe Sepsis
Depression Before Severe Sepsis

Travel to Denmark...

- Comprehensive information on entire population
  - Hospitalizations
  - Outpatient medications

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Search

Original Investigation | Caring for the Critical Ill Patient
Psychiatric Diagnoses and Psychoactive Medication Use Among Nonsurgical Critically Ill Patients Receiving Mechanical Ventilation
Hassal Naxer, MD, MS; Ochser, MD; Christensen, WS, MD; Marcu, B.; Selmer, M.; Banet, M.; Kessing, L. V. MD; Arentzen, M.

JAMA 2014
ICU Patients
Hospital controls
General population controls

5 years prior
1 year prior
Index date of hospitalization for ICU/hospital patients

Wunsch et al. JAMA 2014

Psychiatric medication prescriptions before hospitalization

ICU cohort
Hospital cohort
General cohort

0 10 20 30 40 50
Psychiatric diagnosis
Psychoactive prescription

Percentage of people with any diagnosis or prescription (%)

Wunsch et al. JAMA 2014

1. Survived to hospital discharge
2. Had no psychiatric diagnoses or psychoactive medications in the 5 years prior

N=9,912

Wunsch et al. JAMA 2014
Psychiatric Diagnoses

<table>
<thead>
<tr>
<th>Group</th>
<th>HR</th>
<th>NS</th>
<th>0.5%</th>
<th>HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any psychiatric diagnosis</td>
<td>3.42</td>
<td>NS</td>
<td>21.77</td>
<td></td>
</tr>
</tbody>
</table>

Wunsch et al. JAMA 2014

Figure: Cumulative Incidence Curves of New Psychiatric Diagnoses or Prescriptions

Wunsch et al. JAMA 2014

Prescription medications

<table>
<thead>
<tr>
<th>Group</th>
<th>HR</th>
<th>HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any prescription for psychiatric medications</td>
<td>2.45</td>
<td>21.09</td>
</tr>
</tbody>
</table>

Wunsch et al. JAMA 2014
A side note…

About medication reconciliation
Approx 8 million people admitted to ICU in the US every year

?? >100,000 receiving antipsychotics after discharge

Recent insights...

<table>
<thead>
<tr>
<th>Antipsychotic cohort (n=899,917)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescription within 7 days of discharge</td>
</tr>
<tr>
<td>Prescription within 30 days of discharge</td>
</tr>
<tr>
<td>Chronic use over 1 year*</td>
</tr>
<tr>
<td>1-year cost of medication (SCAD)^2</td>
</tr>
</tbody>
</table>

Scales et al JGIM 2016

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<table>
<thead>
<tr>
<th>Table 1: ICU-related PTSD incidence and symptom clusters</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCL-S Score, median (IQR)</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>----------------------------</td>
</tr>
<tr>
<td>ICU-related PTSD incidence, n (%)</td>
</tr>
<tr>
<td>By PCL-S Score ≥50</td>
</tr>
<tr>
<td>By DSM-IV-IV Mating</td>
</tr>
</tbody>
</table>

Turner D, Gracely MD, MD, Dr, Christopher G. Bylsma, MD, Jennifer L. Thompson, MSc.
Amy L. Keel, MA, DC-OPH, Mark P. Stitt, MD, PhD, Nilmi, Wasserman, MD, Richard B. Goodwin, MD, Jean C. Beckman, MD, PhD; Tanjalo ChandraDev, PhD, Robert S. Dixon, MD, PhD; Strother Jr., MD, MD; Gholami, PhD; Pan D. Panhychung, MD, MD, PhD
## Depression

Depression, Posttraumatic Stress Disorder, and Functional Disability in Survivors of Critical Illness: results from the BRAIN ICU (Bringing to light the Risk Factors And Incidence of Neuropsychological dysfunction in ICU survivors) Investigation: A Longitudinal Cohort Study

James C. Jackson, PsyD, PhD,1,2,4, Proksh P Parshuram, MD, FRCPC, Timothy D Girard, MD,1,3, Nathan E Brummel, MD,1, Jennifer L Thompson, MPH, Christopher O Hughes, MD,1, Brenda T-P An, MD, MPH, Eldar E Yildizbas, MD, DML, Alessandro Moretti, MD,1, Ayumi K Shintani, PhD,4,5, Proksh P Parshuram, PhD,6,7,6, Gordon R Bernard, MD,7,8, Robert S Stiess, MD,7,9, Douglas E Weisberg, MD, MPH,9, and for the BRAIN ICU (Bringing to light the Risk Factors And Incidence of Neuropsychological dysfunction in ICU survivors) Study Investigators++

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### Depression scores (BDI-II)

<table>
<thead>
<tr>
<th>Depression</th>
<th>3 mos</th>
<th>12 mos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>10 (5-17)</td>
<td>10 (5-17)</td>
</tr>
<tr>
<td>Somatic</td>
<td>8 (5-13)</td>
<td>8 (4-13)</td>
</tr>
<tr>
<td>Cognitive</td>
<td>2 (0-4)</td>
<td>1 (0-5)</td>
</tr>
</tbody>
</table>

- 14-19 = mild depression
- 20-28 = moderate depression

Jackson et al Lancet Resp Med 2014

![Figure A: Risk Factors for ICU-related PTSD at 3 and 12-month Follow-up](attachment:figureA.png)

Patel et al AJRCCM 2016
### Depression scores (BDI-II)

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<td>8/13</td>
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<tr>
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<td>2 (0-4)</td>
<td>2/8</td>
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### Families

> “...depression is much more common than PTSD after critical illness and is driven by somatic symptoms indicative of physical disabilities rather than by cognitive symptoms.”

Jackson et al Lancet Resp Med 2014

### Interventions??

NEJM 2016
Follow-up clinics

It all seemed so right…

“The nurses followed a set format with standardised intervention and assessment requirements. An intensive care consultant was immediately available for support or to assess the patients for onward referral to other medical services and on patient request. Clinic appointments had the following components: structured case review, discussion of experiences of intensive care, formal assessment of requirement for specialist medical referral, and screening for psychological morbidity relating to admission to the intensive care unit... Patients with “caseness” or in whom there was clinical concern were referred for review by a mental health professional, review of current drug treatment, visit to the intensive care unit if appropriate, and physiotherapy if appropriate, and a review letter on the patient’s progress was sent to each patient’s general practitioner.”

Cuthbertson et al BMJ 2009

<table>
<thead>
<tr>
<th>Interventions (n=104)</th>
<th>3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion of intensive care experience</td>
<td>100%</td>
</tr>
<tr>
<td>Patients referred for specialists</td>
<td>29%</td>
</tr>
<tr>
<td>Psychological screen</td>
<td>99%</td>
</tr>
<tr>
<td>Referral for psychological review</td>
<td>24%</td>
</tr>
<tr>
<td>Review of current drug therapy</td>
<td>97%</td>
</tr>
<tr>
<td>Review letter to patient’s general practitioner</td>
<td>100%</td>
</tr>
</tbody>
</table>

Cuthbertson et al BMJ 2009
Couldn’t find a benefit…

BMJ 2009

Gender differences in psychological morbidity and treatment in intensive care survivors - a cohort study

Schöpf et al Critical Care 2010, Maté 2010
http://ccjournal.com/content/14/3/1
Refinement of the brew
New approaches...

Specific, early, targeting of psychological support

Provision Of Psychological support

A few notes of caution...

- Sebastian Junger
  (A Perfect Storm)

-VANITY FAIR


Abdominal Aneurysm
- Heparin
- Blood Loss
- Hemorrhagic Shock

Wound Healing Process: Blood Transfusion. The patient received a blood transfusion and the rest signs improved. The surgeon observed the condition that all will well, but the bleeding continued.

Coping With Heart: Transfusion of blood was clinically indicated, but an unexpected complication occurred.

Low Cardiac Output
- Organ Failure
- Death (or Surgical Repair)

Revised physiology in intensive care medicine
Conclusions

- Burden of psychiatric diagnoses and prescriptions
- Important to know prior “state” of individuals
- Need better understanding of risk factors
What can you do?

- Awareness (PICS)
- Education
  - Patients
  - Families
  - Internists/surgeons/family doctors
- Screening

Thank you!

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