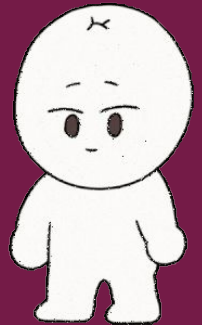


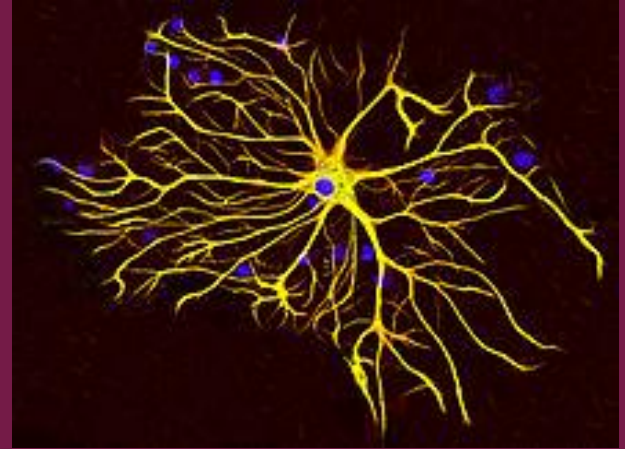
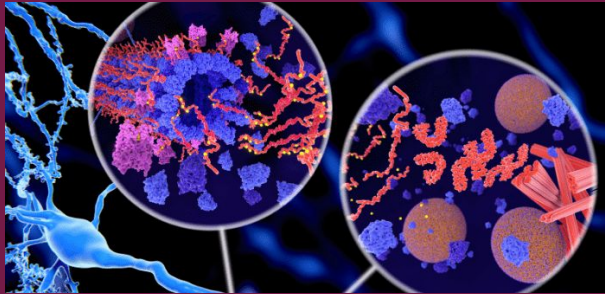
Using Blood Biomarkers to Predict Traumatic Brain Injury

By: Rosol Mikail






Background

- Blood Biomarkers and their correlation with Traumatic Brain Injury (TBI)
- GFAP
- Tau



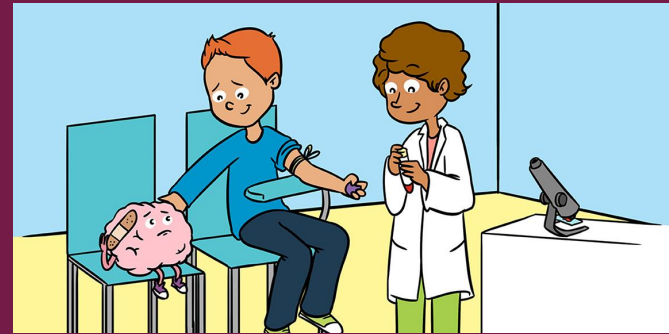
Diagnosing Traumatic Brain Injury

- Neurological Exam
- Neuroimaging

Behaviour	Response
 Eye Opening Response	<ol style="list-style-type: none">4. Spontaneously3. To speech2. To pain1. No response
 Verbal Response	<ol style="list-style-type: none">5. Oriented to time, person and place4. Confused3. Inappropriate words2. Incomprehensible sounds1. No response
 Motor Response	<ol style="list-style-type: none">6. Obeys command5. Moves to localised pain4. Flex to withdraw from pain3. Abnormal flexion2. Abnormal extension1. No response

Benefit of Using Blood Biomarkers

- Undiagnosed TBI
- Accessibility
- Treatment



Research Questions

1. Which blood biomarker GFAP or Tau is a better predictor of TBI?
2. Which group TBI, Polytrauma, or Non-TBI has a higher concentration of the blood biomarkers GFAP and Tau?

Hypothesis

- GFAP biomarker will be a better predictor for TBI than Tau
- The biomarkers concentration will be higher in the TBI group compared to the Polytrauma and TBI injuries group.

Method

- Used frozen plasma sample from the ATIII study
- ELISA Kit used for the GFAP biomarker
- Luminex Kit used for the Tau biomarker

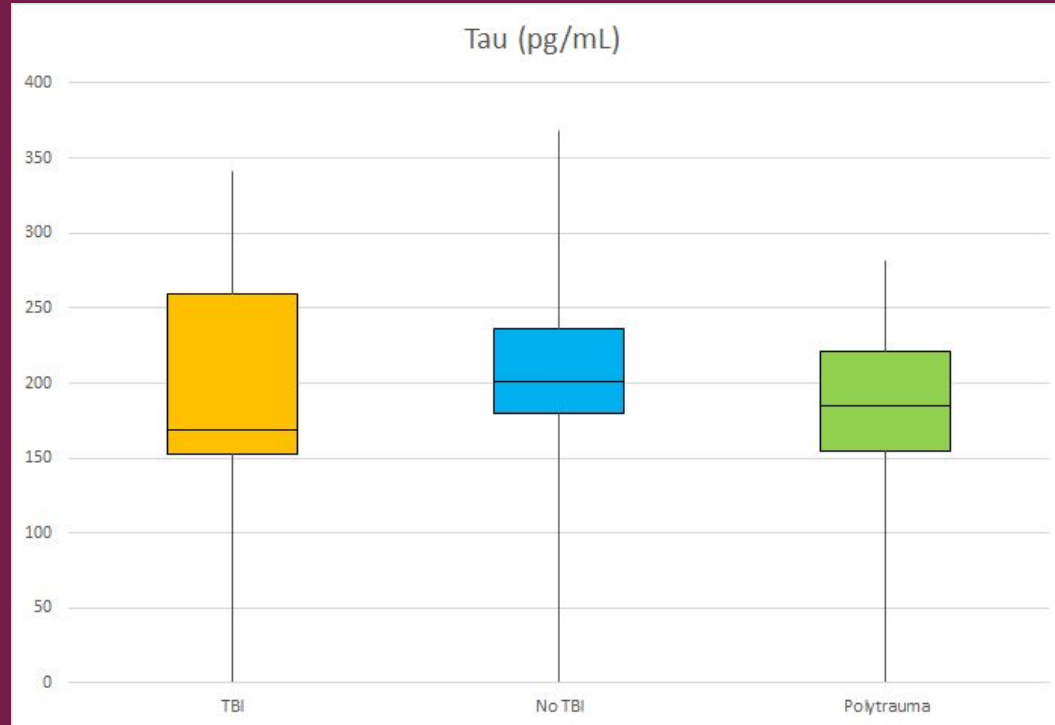
Baseline/Demographic Data

	TBI (N=50)	Polytrauma (N=41)	Non TBI trauma (131)	P-value
Age	69 (50, 76)	51.50 (37.5, 65.5)	50 (34, 65)	<0.001
Gender (Male)	72.0%	65.0%	77.9%	0.245
GCS	14 (14, 15)	14 (3, 15)	15 (15, 15)	<0.001
ISS Score	17.0 (11.0, 26.3)	13.5 (10.0, 18.0)	14.0 (10.0, 22.0)	0.051

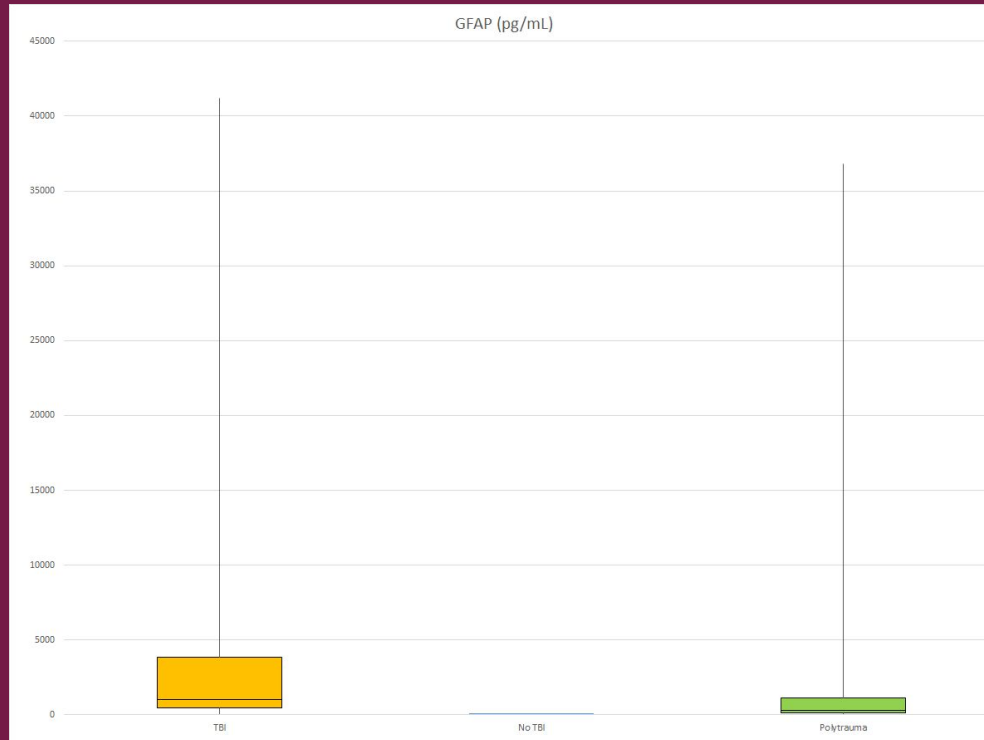
Admission Data

	TBI (N=50)	Polytrauma (N=41)	Non TBI trauma N=(131)	P-value
Number of hospital stay	4.0 (2.0, 7.0)	9.0 (5.0,14.0)	6.0 (3.5, 9.5)	<0.001
Number of ICU Day	2.0 (2.0, 3.0)	3.0 (2.0,9.0)	2.0 (1.0, 3.0)	<0.001
Number of ventilator days	0.0 (0.0,0.0)	1.0 (0.0, 8.0)	0.0 (0.0, 0.0)	<0.001

Preliminary Data Tau



Preliminary Data GFAP



Next steps

- Continue collecting data and analyze them
- Write my research paper



Thank you Samantha Underwood, Beth Rick, and Dr. Martin Schreiber!

Any Questions?

Citations

- <https://c.tenor.com/mjrHl8f08i8AAAAj/extremely-distressed-head-injury.gif>
- https://www.frontiersin.org/files/Articles/427315/frym-07-00027-HTML-r1/image_m/main.jpg
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