

BSDS Capstone

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June 24 2019

Table 1. Patient characteristics by outcome.

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
Age (Years)				
Mean \pm SD	33.31 \pm 15.38	35.22 \pm 15.77	30.13 \pm 14.20	0.002
Median (IQR)	30.81 (23.52, 38.70)	32.27 (25.02, 42.86)	28.31 (22.34, 36.01)	
Age (Years) - n(%)				
< 16	29 (7)	13 (5)	16 (11)	0.015
16 - 24	87 (22)	49 (20)	38 (25)	
25 - 44	206 (52)	128 (51)	78 (52)	
45-64	54 (14)	41 (16)	13 (9)	
65+	24 (6)	19 (8)	5 (3)	
Sex - n(%)				
Male	364 (91)	227 (91)	137 (91)	0.86
Female	36 (9)	23 (9)	13 (9)	
Patient Race - n(%)				
Black / African	397 (99)	248 (99)	149 (99)	1
Asian or Pacific Islander	3 (1)	2 (1)	1 (1)	
Weight (kg)				
Mean \pm SD	67.51 \pm 14.60	68.62 \pm 13.03	65.66 \pm 16.77	0.24
Median (IQR)	70.00 (61.75, 76.00)	70.00 (62.00, 77.75)	68.00 (61.00, 75.00)	
Mechanism of Injury - n(%)				
MVA/Bike	315 (80)	197 (80)	118 (79)	0.45
Assault/BFT	59 (15)	33 (13)	26 (17)	
Fall	13 (3)	9 (4)	4 (3)	
All Other	7 (2)	6 (2)	1 (1)	

Table 2. Pre-hospitalization factors by patient outcome.

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
GCS Total Score				
Mean \pm SD	5.72 \pm 2.37	5.25 \pm 2.03	6.38 \pm 2.65	<0.001
Median (IQR)	6 (4.00, 7.00)	5 (4.00, 7.00)	7.00 (5.00, 8.00)	
Advanced Airway Management (Y/N)- n(%)				
ETI	16 (8)	11 (9)	5 (6)	0.49
LMA	16 (8)	11 (9)	5 (6)	
Combitube	26 (12)	17 (14)	9 (10)	
None	151 (72)	84 (68)	67 (78)	0.74
Lowest Recorded Oxygen Saturation (SaO2) %age				

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
Mean \pm SD	94.01 \pm 6.90	93.40 \pm 8.21	94.90 \pm 4.20	0.51
Median (IQR)	96 (92.00, 98.00)	96 (92.00, 98.00)	96.00 (92.00, 98.00)	
Pre-Hospital Hypoxia - n(%)				
Yes	26 (20)	17 (22)	9 (17)	0.68
No	103 (80)	60 (78)	43 (83)	
Lowest Recorded Systolic BP (mmHG)				
Mean \pm SD	122.53 \pm 22.25	121.96 \pm 22.86	123.38 \pm 21.45	1
Median (IQR)	121 (110.00, 135.00)	120 (110.00, 135.00)	126.00 (110.00, 135.25)	
Pre-Hospital Hypotension - n(%)				
Yes	8 (5)	5 (5)	3 (4)	0.45
No	163 (95)	98 (95)	65 (96)	
Pre-Hospital IV (Y/N) - n(%)				
Yes	195 (97)	117 (98)	78 (95)	0.7
No	7 (3)	3 (2)	4 (5)	
Pre-Hospital Pupil Abnormalities (Y/N) - n(%)				
Yes	0 (0)	0 (0)	0 (0)	
No	0 (0)	0 (0)	0 (0)	

Table 3. ED factors by patient outcome.

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
Time to Arrival at ED (Hours)				
Mean \pm SD	11.25 \pm 10.20	11.21 \pm 10.72	11.32 \pm 9.30	0.63
Median (IQR)	8.00 (4.44, 14.36)	7.85 (4.35, 13.40)	9.00 (4.52, 16.00)	
GCS Total Score				
Mean \pm SD	5.62 \pm 1.72	5.24 \pm 1.73	6.25 \pm 1.53	<0.001
Median (IQR)	6.00 (4.00, 7.00)	5.00 (3.25, 7.00)	7.00 (5.00, 7.00)	
GCS Total Score - n(%)				
3-5	171 (43)	131 (52)	40 (27)	<0.001
6-8	229 (57)	119 (48)	110 (73)	
GCS Motor Score				
Mean \pm SD	3.06 \pm 1.42	2.75 \pm 1.40	3.57 \pm 1.31	<0.001
Median (IQR)	3.00 (2.00, 4.00)	3.00 (1.00, 4.00)	4.00 (3.00, 5.00)	
Advanced Airway Management - n(%)				
ETI	183 (46)	112 (45)	71 (47)	0.002
LMA	29 (7)	11 (4)	18 (12)	
Combitube	17 (4)	7 (3)	10 (7)	
None	171 (43)	120 (48)	51 (34)	
Lowest Recorded Oxygen Saturation (SaO2) %age				

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
Mean \pm SD	93.94 \pm 8.77	93.70 \pm 9.07	94.36 \pm 8.24	0.94
Median (IQR)	97.00 (93.00, 99.00)	97.00 (92.00, 99.75)	97.00 (93.25, 99.00)	
ED Hypoxia - n(%)				
Yes	67 (17)	44 (18)	23 (15)	0.56
No	333 (83)	206 (82)	127 (85)	
Lowest Recorded Systolic BP (mmHG)				
Mean \pm SD	122.88 \pm 24.69	123.18 \pm 26.30	122.37 \pm 21.82	0.79
Median (IQR)	124 (110.00, 140.00)	124 (109.00, 140.00)	123.00 (110.00, 139.00)	
ED Hypotension - n(%)				
Yes	38 (10)	27 (11)	11 (7)	0.25
No	357 (90)	220 (89)	137 (93)	
ED IV (Y/N) - n(%)				
Yes	364 (92)	228 (92)	136 (93)	0.89
No	32 (8)	21 (8)	11 (7)	
Abnormal Pupils in ED - n(%)				
Yes	0 (0)	0 (0)	0 (0)	0.43
No	0 (0)	0 (0)	0 (0)	
ED Bilateral Fixed & Dilated Pupils (Y/N) - n(%)				
Yes	56 (16)	41 (18)	15 (11)	0.084
No	298 (84)	182 (82)	116 (89)	
ED Pupil Asymmetry > 1mm - n(%)				
Yes	102 (29)	61 (28)	41 (31)	0.46
No	250 (71)	160 (72)	90 (69)	
CT Scan Performed (Y/N) - n(%)				
Yes	244 (61)	129 (52)	115 (77)	<0.001
No	156 (39)	121 (48)	35 (23)	
Time (Injury to CT Scan) (Hours)				
Mean \pm SD	15.23 \pm 14.67	14.08 \pm 14.72	16.52 \pm 14.57	0.044
Median (IQR)	11.00 (4.73, 20.78)	9.00 (4.18, 20.00)	12.25 (5.58, 23.29)	
Abnormal CT Scan (Y/N) - n(%)				
Yes	213 (87)	119 (92)	94 (82)	0.039
No	30 (12)	10 (8)	20 (17)	
Midline Shift on CT Scan - n(%)				
≤ 0.5 cm	158 (66)	74 (58)	84 (74)	0.007
> 0.5 cm	83 (34)	54 (42)	29 (26)	
Basal Cistern Status on CT Scan - n(%)				
Open	44 (18)	16 (12)	28 (25)	<0.001
Partially Open	108 (44)	49 (38)	59 (52)	
Closed	91 (37)	64 (50)	27 (24)	

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
Hemorrhage (Intracerebral or Subarachnoid) - n(%)				
Yes	96 (40)	58 (45)	38 (34)	0.081
No	145 (60)	71 (55)	74 (66)	

Table 4. Surgical procedures by outcome.

	Total (N = 401)	Alive at F/up (n = 151)	Dead (n = 250)	P-value
Any Neurological Surgery Performed				
Yes	77 (19)	35 (14)	42 (28)	0.081
No	323 (81)	215 (86)	108 (72)	
Craniotomy - n(%)				
Yes	77 (19)	35 (14)	42 (28)	<0.001
No	321 (81)	213 (86)	108 (72)	
Hematoma Evacuation - n(%)				
Yes	63 (16)	28 (11)	35 (23)	<0.001
No	335 (84)	220 (89)	115 (77)	
Decompressive Craniectomy - n(%)				
Yes	36 (9)	21 (8)	15 (10)	0.61
No	0 (0)	0 (0)	0 (0)	