

Supplementary Table 1. Characteristics at admission of all patients with ascites who were alive at discharge vs. those who died/discharged to hospice

| | Alive at discharge (n=623) | Died or Discharged to hospice (n=95) | p value | Cox p value |
|--|-----------------------------------|--|---------|-------------|
| Age (years) | 57 ± 9.8 | 57 ± 11.6 | 0.98 | 0.26 |
| Gender (% male) | 402 (64.5%) | 63 (66%) | 0.73 | 0.96 |
| Etiology -Related to alcohol -Not related to alcohol | 297 (48%) 325 (52%) (n=622) | 46 (48.5%) 49 (51.5%) (n=95) | 0.90 | 0.65 |
| Diabetes (%) | 193 (31.5%) (n=613) | 32 (33.7%) (n=94) | 0.67 | 0.67 |
| On statins (%) | 54 (9%) (n=617) | 10 (11%) (n=93) | 0.53 | 0.73 |
| On beta Blockers (%) | 268 (43%) | 39 (41%) | 0.72 | 0.53 |
| History of variceal hemorrhage (%) | 150 (24%) (n=615) | 16 (17%), (n=94) | 0.12 | 0.24 |
| Refractory ascites (%) | 312 (50.1%) | 54 (56.8%) | 0.22 | 0.06 |
| HCC | 58 (9%) | 9 (9.5%) | 0.96 | 0.27 |
| Infected on admission (%) | 171 (27%) | 31 (32%) | 0.30 | 0.29 |
| BMI | 29 ± 7 | 29 ± 6.5 | 0.62 | 0.40 |
| Temperature (°F) | 98.1 ± 1 | 97.9 ± 1.1 | 0.06 | 0.04 |
| Heart rate (bpm) | 85 ± 17 | 88.8 ± 18 | 0.06 | 0.13 |
| MAP (mmHg) | 86.5 ± 14 | 80.8 ± 13.8 | <0.001 | 0.02 |
| WBC | 7.9 ± 5 | 9.3 ± 6.6 | 0.06 | 0.11 |
| Platelet count | 112.7 ± 71.6 | 111.5 ± 79 | 0.88 | 0.86 |
| Albumin (mg/dL) | 2.8 ± 0.6 | 2.8 ± 0.6 | 0.63 | 0.62 |
| Bilirubin (mg/dL) | 5.2 ± 6 | 8.7 ± 9 | <0.001 | 0.01 |
| INR | 1.6 ± 0.5 | 1.9 ± 0.6 | <0.001 | 0.002 |
| Creatinine (mg/dL) | 1.5 ± 1.3 | 2.3 ± 1.6 | <0.001 | 0.001 |
| Serum Na (mEq/L) | 133.4 ± 5.8 | 131 ± 6.7 | <0.001 | 0.19 |
| Child score | 9.9 ± 1.9 | 11 ± 2.1 | <0.001 | 0.001 |
| MELD | 19.2 ± 7 | 25.6 ± 7.6 | <0.001 | <0.001 |

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|--------------------|-----------|----------|------|------|
| Esophageal varices | | | | |
| - No or small | 293 (66%) | 41 (68%) | | |
| - Medium/large | 149 (34%) | 19 (32%) | 0.75 | 0.65 |
| | (n=442) | (n=60) | | |

New Supplementary Table 2: Predictors of death in patients with ascites (Cox regression analysis)

| Variables on admission entered in model | Parameter Estimate | Standard Error | Chi-Square | Pr > ChiSq | Hazard Ratio (95% CI) |
|---|--------------------|----------------|------------|------------------|---------------------------|
| MAP | -0.00587 | 0.00844 | 0.4838 | 0.4867 | 0.994(0.978,1.011) |
| Temperature | -0.21264 | 0.10321 | 4.2446 | 0.0394 | 0.808(0.660,0.990) |
| MELD | 0.05852 | 0.01354 | 18.6895 | < 0001 | 1.060(1.033,1.089) |
| Serum sodium | -0.01783 | 0.01648 | 1.1698 | 0.2794 | 0.982(0.951,1.015) |
| On beta-blockers (no vs. yes) | 0.11379 | 0.21798 | 0.2725 | 0.6017 | 1.121(0.731,1.718) |

| Variables on admission entered in model | Parameter Estimate | Standard Error | Chi-Square | Pr > ChiSq | Hazard Ratio (95% CI) |
|---|--------------------|----------------|------------|---------------|---------------------------|
| MAP | -0.00800 | 0.00868 | 0.8488 | 0.3569 | 0.992(0.975,1.009) |
| Temperature | -0.18374 | 0.09088 | 4.0874 | 0.0432 | 0.832(0.696,0.994) |
| Child score | 0.17160 | 0.05858 | 8.5800 | 0.0034 | 1.187(1.058,1.332) |
| Serum sodium | -0.00616 | 0.01651 | 0.1392 | 0.7091 | 0.994(0.962,1.027) |
| On beta-blockers (no vs. yes) | 0.13307 | 0.22313 | 0.3557 | 0.5509 | 1.142(0.738,1.796) |

Supplementary Table 3. Characteristics at admission of patients with refractory ascites who were alive at discharge vs. those who died/discharged to hospice

| | Alive at discharge (n=312) | Died or Discharged to hospice (n=54) | <i>p</i> value | Cox <i>p</i> value |
|--|-------------------------------|--|----------------|--------------------|
| Age (years) | 57.6 ± 9.2 | 57 ± 12.2 | 0.71 | 0.34 |
| Gender (% male) | 198 (63.5%) | 38 (70%) | 0.33 | 0.39 |
| Etiology -Related to alcohol -Not related to alcohol | 148 (47%) 164 (53%) | 26 (48%) 28 (52%) | 0.92 | 0.59 |
| Diabetes (%) | 103 (34%) (n=303) | 17 (31.5%) (n=54) | 0.72 | 0.95 |
| On statins (%) | 35 (11%) (n=308) | 8 (15%) (n=52) | 0.41 | 0.77 |
| On Beta Blockers (%) | 148 (47%) | 19 (35%) | 0.10 | 0.11 |
| History of variceal hemorrhage (%) | 93 (30%), n=307 | 12 (23%), n=53 | 0.26 | 0.63 |
| HCC | 23 (7%) | 5 (9%) | 0.58 | 0.05 |
| BMI | 29 ± 8 | 29 ± 5 | 0.90 | 0.05 |
| Temperature (°F) | 98.1 ± 0.9 | 97.9 ± 1.1 | 0.28 | 0.07 |
| Heart rate (bpm) | 85 ± 17, n=310 | 89 ± 17 | 0.13 | 0.21 |
| MAP (mmHg) | 85.6 ± 14, n=311 | 81 ± 14 | 0.024 | 0.27 |
| WBC | 8.1 ± 5, n=308 | 9.4 ± 7 | 0.20 | 0.32 |
| Platelet count | 114 ± 72, n=307 | 110 ± 80 | 0.74 | 0.93 |
| Albumin (-g/dL) | 3 ± 0.6, n=291 | 2.8 ± 0.6, n=51 | 0.71 | 0.17 |
| Bilirubin (mg/dL) | 4.7 ± 6, n=309 | 7.2 ± 7, n=53 | 0.004 | 0.33 |
| INR | 1.6 ± 0.5, n=306 | 1.8 ± 0.6, n=52 | 0.002 | 0.03 |
| Creatinine (mg/dL) | 1.6 ± 1.4, n=311 | 2 ± 1.5 | 0.05 | 0.44 |
| Serum Na (mEq/L) | 132.6 ± 6, n=311 | 130.7 ± 6, n=53 | 0.047 | 0.76 |
| | | | | |
| Child score | 9.9 ± 1.8, n=262 | 11 ± 2.1, n=48 | <0.001 | 0.02 |
| MELD | 19.4 ± 7, n=306 | 24.4 ± 7.7, n=52 | <0.001 | 0.03 |

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|--------------------|-----------|----------|------|------|
| Esophageal varices | | | | |
| - No or small | 149 (63%) | 25 (66%) | | |
| - Medium/large | 87 (37%) | 13 (34%) | 0.75 | 0.73 |
| | (n=236) | (n=38) | | |

Supplementary Table 4. Predictors of death in patients with refractory ascites (Cox regression analyses)

| Variables on admission entered in model | Parameter Estimate | Standard Error | Chi-Square | Pr > ChiSq | Hazard Ratio (95% CI) |
|---|--------------------|----------------|------------|---------------|---------------------------|
| Child_score | 0.17515 | 0.07365 | 5.6553 | 0.0174 | 1.191(1.031,1.376) |
| On beta-blockers (no vs. yes) | 0.45509 | 0.30945 | 2.1628 | 0.1414 | 1.576(0.859,2.891) |

| Variables on admission entered in model | Parameter Estimate | Standard Error | Chi-Square | Pr > ChiSq | Hazard Ratio (95% CI) |
|---|--------------------|----------------|------------|------------|-----------------------|
| MELD | 0.03253 | 0.01720 | 3.5760 | 0.0586 | 1.033(0.999,1.068) |
| On beta-blockers (no vs. yes) | 0.39213 | 0.30205 | 1.6854 | 0.1942 | 1.480(0.819,2.675) |

Supplementary Table 5. Parameters measured at admission and at time of beta blocker discontinuation

| | At admission (n=151) | At time of BB discontinuation (n=151) | <i>p</i> value <i>p</i> ve |
|---------------------|-------------------------|---|----------------------------|
| Heart rate (bpm) | 82 ± 18 (n=149) | 77 ± 16 (n=149) | 0.0002 |
| Systolic BP (mmHg) | 114 ± 19 (n=149) | 103 ± 20 (n=149) | <0.001 |
| Diastolic BP (mmHg) | 67 ± 13 (n=148) | 59 ± 13 (n=148) | <0.001 |
| MAP (mmHg) | 83 ± 14 (n=148) | 74 ± 15 (n=148) | <0.001 |
| WBC | 7.8 ± 4.3 (n=122) | 7.3 ± 4.3 (n=122) | 0.13 |
| Platelet count | 107 ± 62 (n=122) | 95 ± 54 (n=122) | <0.0001 |
| Bilirubin (mg/dL) | 5.8 ± 6.6 (n=140) | 5.9 ± 6.6 (n=140) | 0.82 |
| INR | 1.7 ± 0.6 (n=132) | 1.8 ± 0.7 (n=132) | 0.01 |
| Creatinine (mg/dL) | 1.8 ± 1.5 (n=146) | 1.9 ± 1.5 (n=146) | 0.41 |
| Serum Na (mEq/L) | 132.9 ± 6.6 (n=146) | 134.3 ± 6.2 (n=146) | 0.0002 |
| Child score | 10.6 ± 2 (n=115) | 10.2 ± 2 (n=115) | 0.01 |
| MELD | 21.5 ± 7.7 (n=128) | 22.2 ± 7.9 (n=128) | 0.08 |

Supplementary Table 6. Comparison of characteristics at time of discontinuation of BB vs. those at time of reinitiation in patients with ascites who discontinued BB.

| | Discontinued beta-blockers (n=61) | Reinitiated Beta-Blockers (n=61) | <i>p</i> value <i>p</i> ve |
|---------------------|--------------------------------------|-------------------------------------|----------------------------|
| Heart rate (bpm) | 77 ± 16 (n=60) | 82 ± 16 (n=60) | 0.04 |
| Systolic BP (mmHg) | 104 ± 21 (n=60) | 114 ± 15.6 (n=60) | 0.0001 |
| Diastolic BP (mmHg) | 61 ± 13 (n=60) | 69 ± 11 (n=60) | <0.001 |
| MAP (mmHg) | 75.4 ± 14.7 (n=60) | 84 ± 11 (n=60) | <0.001 |
| WBC | 7.01 ± 4.4 (n=58) | 6.3 ± 3.2 (n=58) | 0.12 |
| Platelet count | 98 ± 48 (n=58) | 94 ± 55 (n=58) | 0.77 |
| Bilirubin (mg/dL) | 5.0 ± 5.1 (n=52) | 4.3 ± 4.1 (n=52) | 0.13 |
| INR | 1.7 ± 0.5 (n=47) | 1.7 ± 0.4 (n=47) | 0.65 |
| Creatinine (mg/dL) | 1.7 ± 1.3 (n=59) | 1.7 ± 1.5 (n=59) | 0.90 |
| Serum Na (mEq/L) | 135 ± 5.7 (n=59) | 135 ± 5.4 (n=59) | 0.53 |
| Child score | 10 ± 1.6 (n=44) | 9.5 ± 1.5 (n=44) | 0.02 |
| MELD | 20.4 ± 8.7 (n=44) | 19.7 ± 6.7 (n=44) | 0.43 |