

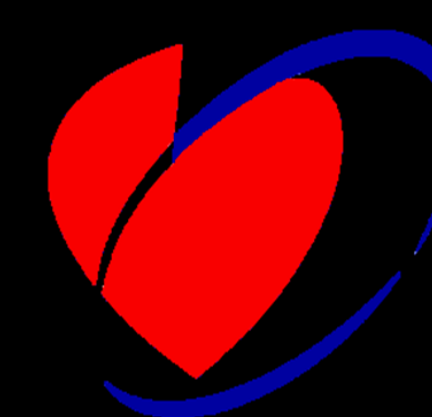
FACTORS INFLUENCING THE OUTCOMES OF HYPERTENSIVE HOSPITALIZED PATIENTS :

THE IMPORTANCE OF GLYCEMIC CONTROL



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BACKGROUND

Hypertension and diabetes are two leading risk factors for atherosclerosis and its complications, especially heart. There is substantial overlap between diabetes and hypertension in etiology and disease mechanisms. Obesity, inflammation, oxidative stress, and insulin resistance are thought to be the common pathways. The presence of both hypertension and diabetes mellitus confers a higher risk of cardiovascular-renal disease than the presence of either condition alone. In addition, the presence of both hypertension and diabetes mellitus makes the management of both diseases difficult and complicated.

OBJECTIVE

To assess the extent of diabetic involvement towards adverse events and length of stay of hypertensive hospitalized patients.

DESIGN AND METHOD

This cross-sectional study analyzes hypertensive samples which were hospitalized for decompensated heart failure at National Cardiovascular Center Harapan Kita Indonesia from 2015 until mid-2016. Samples were taken consecutively among non-new Acute Coronary Syndrome patients according to inclusive and exclusive criteria. Bivariate and multivariate analysis were done using SPSS-20 program.

RESULTS AND CONCLUSION

Among 263 samples, the occurrence of worsening renal failure (WRF), length of stay (LOS) > 5 days, and in-hospital death were 23.2%, 62.5%, and 3.3% respectively, as shown at Table 1 below. Generally, samples with and without DM are statistically equal.

Table 1. Baseline Characteristics of the Study

| Total Samples = 263 | | | | | |
|---|------------|-----------------|------------------------------------|---------------------------------------|---------|
| Variables | N (%) | Mean (min, max) | Group with Diabetes Mellitus N (%) | Group without Diabetes Mellitus N (%) | Sig. |
| Worsening Renal Failure | 61 (23.2) | | | | |
| Length of stay | | 8.67 (2, 55) | | | |
| LOS > 5 days | 164 (62.5) | | | | |
| Inhospital death | 9 (3.3) | | | | |
| Diabetes Mellitus | 202 (76.8) | | | | |
| Age | | 59.73 (33, 87) | | | |
| Age > 75 years old | 13 (4.9) | | 8 (4) | 5 (8.2) | .157 |
| Previously known CHF | 247 (93.9) | | | | |
| Systolic BP ≥ 140 mmHg | | | 58 (28.9) | 14 (23) | .231 |
| ECG with Atrial Fibrillation | | | 41 (20.3) | 11 (18) | .426 |
| Admission Hb ≥ 12.5 g/dl | | | 82 (40.6) | 20 (32.8) | .172 |
| Admission RBG ≥ 200 mg/dl | | | 60 (30.2) | 2 (3.3) | < .001* |
| Admission serum Cr > 2.5 g/dl | | | 40 (19.8) | 9 (14.8) | .263 |
| Left Ventricle EF < 40% | | | 33 (19.8) | 12 (22.6) | .391 |
| Admission therapy of Furosemide dose > 80 mg (iv) | | | 28 (13.9) | 9 (14.8) | .503 |
| Admission therapy without ACEi/ARB | | | 47 (23.3) | 12 (19.7) | .345 |

Samples with Hypertensive Heart Failure
→ Analysis of adverse outcomes
→ Multivariate analysis

Worsening Renal Failure

| VARIABLES | Sig. | Odd Ratio |
|------------------------|--------|-----------|
| Systolic BP > 140 mmHg | < .001 | 4.13 |
| History of Diabetes | .004 | 2.9 |

Length of Stay

| VARIABLES | Sig. | Odd Ratio |
|---------------------|------|-----------|
| History of Diabetes | .028 | 2.21 |

Inhospital Death

| VARIABLES | Sig. | Odd Ratio |
|--|------|-----------|
| Admission Random Blood Glucose > 200 mg/dl | .017 | 2.406 |

After adjusted with other independent variables, only diabetic status was significant in producing longer LOS and occurrence of WRF. SBP > 140 mmHg also had a role to worsens the renal function. Likewise, admission RBG > 200 mg/dl became the only significant predictor towards in-hospital death. Surprisingly, senility, anemia, LVEF and baseline s-Cr were not one of them.

As final conclusion, in hypertensive hospitalized patients, we should pay more attentions towards diabetic status and blood glucose level, not only to prevent WRF and in-hospital death, but also to shorten LOS. Future study with larger and randomized sample needed in order to produce better generalization and thus the result.

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