Risk factors and incidence of contrast induced nephropathy following coronary intervention

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Abstrak

Contrast induced nephropathy (CIN) merupakan salah satu komplikasi pemberian media kontras yang paling penting. Akan tetapi, insidens dan faktor-faktor yang mempengaruhi CIN setelah suatu tindakan intervensi koroner belum pernah dilaporkan di Indonesia. CIN didefinisikan sebagai peningkatan kreatinin serum sebesar 0,5 mg/dl atau lebih pada hari ke 3 pasca tindakan. Dari 312 subyek yang ikut dalam penelitian ini didapatkan insidens CIN sebesar 25%. Pada analisis bivariat didapatkan faktor hipertensi, diabetes mellitus, kelas NYHA, volume dan jenis zat kontras, kadar kreatinin serum > 1,5 mg/dl, proteinuria dan fraksi ejeksi ≤ 35% secara bermakna mempengaruhi kejadian CIN. Pada analisis multivariate hanya hipertensi [hazard rasio (HR) = 2,89; 95% interval kepercayaan (CI) = 1,78 s/d 4,71; P = 0,000], diabetes mellitus (HR = 3,09; 95% CI = 1,89 s/d 5,06, P = 0,000), fraksi ejeksi (EF) ≤ 35% (HR = 2,92; 95% CI = 1,72 s/d 4,96; P = 0,000), volume zat kontrast > 300 ml (HR = 7.73; 95% CI 3,09 s/d 19,37; P = 0,000) dan proteinuria (HR = 14,96; 95% CI = 3,45 s/d 64,86; P = 0,000) yang merupakan faktos risiko bebas CIN. Kesimpulannya adalah insidens CIN pada hari ke 3 pada pasien yang dilakukan intervensi koroner sebesar 25%. Hipertensi, diabetes melitus, EF ≤ 35%, volume zat kontras > 300 ml dan proteinuria merupakan faktor risiko bebas CIN.
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Abstract
Contrast induced nephropathy (CIN) is one of important complication of contrast media administration. Its incidence and risk factors among Indonesian patients undergoing coronary intervention has not been reported yet. CIN was defined as increasing of serum creatinine by 0.5 mg/dl or more in the third day following contrast media exposure. Of 312 patients undergoing coronary intervention, 25% developed CIN. Patient-related risk factors comprised of hypertension, diabetes mellitus, NYHA class, proteinuria, serum creatinine > 1.5 mg/dl and ejection fraction ≤ 35%. Contrast-related risk factors comprised of contrast media volume > 300 ml, contrast media type. However, our final model demonstrated that only hypertension [Hazard ratio (HR) = 2.89, 95% confidence intrval (CI) = 1.78 to 4.71, P = 0.000], diabetes mellitus (HR = 3.09, 95% CI = 1.89 to 5.06, P = 0.000), ejection fraction (EF) ≤ 35% (HR = 2.92; 95% CI = 1.72 to 4.96; P = 0.000), total contrast volume > 300 ml (HR = 7.73; 95% CI = 3.09 to 19.37; P = 0.000) and proteinuria (HR = 14.96; 95% CI = 3.45 to 64.86; P = 0.000) were independent risk factors of CIN. In conclusion, CIN developed in 25% of patients undergoing coronary intervention. The independent risk factors of CIN included hypertension, diabetes mellitus, EF ≤ 35%, contrast volume > 300 ml and proteinuria.