


Conference discussion

Dr. J. Pepper (London, UK): Can I just ask if you examined the gradients across the new valve postoperatively and whether there was any correlation between higher gradients across the valve and failure of the BNP to fall and failure of LV mass regression to progress normally? Dr. Della Corte: These were all patients with pure aortic regurgitation.

Dr. Pepper: Yes, but once you put the valve in you might have given them a bit of stenosis.

Dr. Della Corte: We initially included in the analysis also the projected effective orifice area, not the gradient actually but the effective orifice area, and it did not correlate with BNP in the postoperative period.

eComment: Nt-pro-BNP monitoring in cardiac surgery patients – is there more to consider?

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doi:10.1510/icvts.2007.168039A

We read with great interest the recent report by Dr. Della Corte and coworkers monitoring the course of nt-pro-BNP levels among patients suffering chronic aortic regurgitation pre- and post-cardiac surgery [1]. Unfortunately, the authors did not comment on other sources of potential nt-pro-BNP production which might have confounded their findings.

Recently, a study was published among 135 patients undergoing various cardiac surgery procedures [2]. Pre-operative serum NT-pro-BNP levels were significantly higher in patients with an ICU length of stay of more than 2 days or death prior to postoperative day 28 (3118 ng/l vs. 705 ng/l; P<0.001). Pre-operative serum NT-pro-BNP levels were also significantly higher in patients needing inotropic agents (2628 ng/l vs. 548 ng/l, P<0.001) or IABP insertion (3705 ng/l vs. 935 ng/l; P<0.001) or developing renal failure (2857 ng/l vs. 945 ng/l; P<0.001) postoperatively. The correlation between the serum NT-pro-BNP level and EuroSCORE was good (r=0.658; P<0.001).

Intensive care parameters have an influence on nt-pro-BNP levels [3]. Using multivariate analysis, serum NT-pro-BNP levels at 36 h were associated with increased noradrenaline dose (P<0.001), decreased preoperative ejection fraction (EF) Group (P=0.013) and elevated preoperative NT-pro-BNP (P<0.001). Factors not associated with NT-pro BNP levels at 36 h include the operation type, bypass and cross-clamp times, use of milrinone and troponin-T.

Kidney function is closely related to nt-pro-BNP levels, too [4]. After adjustment for confounders among 356 patients undergoing non-cardiac vascular surgery, NT-pro-BNP levels and glomerular filtration rate (GFR) remained significantly associated with the end point (P=0.005). The prognostic value of NT-pro-BNP was most pronounced in patients with GFR > or =90 (odds ratio [OR] 1.18, 95% confidence interval [CI] 0.80 to 1.76) compared with patients with GFR 60 to 89 (OR 1.04, 95% CI 1.002 to 1.07), and with GFR 30 to 59 (OR 1.12, 95% CI 1.03 to 1.21). In patients with GFR <30 ml/min/1.73 m(2), NT-pro-BNP levels have no prognostic value (OR 1.00, 95% CI 0.99 to 1.01). The authors concluded that the discriminative value of NT-pro-BNP is most pronounced in patients with GFR > or =90 ml/min/1.73 m(2) and has no prognostic value in patients with GFR <30 ml/min/1.73 m(2).

Besides medication such as Angiotensin-converting enzyme inhibitors, beta-blockers and spironolactone do have an influence on nt-pro-BNP levels which, unfortunately, is not mentioned in the aforementioned institutional report.

References


