EVALUATION OF MARKERS OF ACUTE KIDNEY INJURY IN PATIENTS WITH ACUTE DECOMPENSATEDHEART FAILURE IN THE ASSESSMENT METHODS DECONGESTION

Igor Gorda, Andrey Bezrodnyi, Bogomolet's National Medical University, ICU, Kiev, UKRAINE

Objectives:

Our purpose was to compare and assess ≪early≫ (at day 4-6) and ≪late≫ (discharge - Dsc) effects of prolonged optimal-dosed nitrate continuous infusion plus low doses of i.v. diuretics (≪nitrate centered strategy≫ - NC) and moderate doses of i.v. diuretics plus short intermittent nitrate infusion (≪diuretic-centered strategy≫ - DC) on congestion markers (NT-pro-BNP) and renal function (e.g. Cystatin C) and tubular damage (NGAL) biomarkers in pts with acute decompensated heart failure (ADHF)

Methods:

In single-blind parallel-group study pts with «wet-warm» ADHF were randomized 1:2 into 2 groups. NC group (n=31) received optimal-dosed NTG continuous infusion ≥72 hrs plus low doses of i.v. diuretic (≤80 mg pd for furosemide), while DC group (n=60) moderate doses of i.v. diuretic (41-120 mg pd for furosemide) plus short intermittent (<10hrs pd, ≤3 days) NTG. Congestion endpoints was plasma NT-pro-BNP (ELISA) at D4-6 and Dsc. Renal endpoints included acute kidney injury with AKIN criteria as well as eGRF (MDRD) and serum Cystatin C as functional injury biomarkers and plasma NGAL as tubular damage biomarker, both at D4-6 and Dsc

Gro-ups	NT-pro-BNP, M ± m pg/ml			Cystatin C, M ± m ng/ml			NGAL, M ± m ng/ml		
	D1	D4-6	Dsc	D1	D4-6	Dsc	D1	D4-6	Dsc
NC	1274±323	853±273**#	732±124**#	3292±524	3503±608**#	2732±461**#	105±17,1	118±20,4*#	87±14,6**##
DC	1207±312	1086±261	858±244**	3347±563	3882±642**	3146±587**	106±20,8	132±22,7*	93±15,9*

Results:

Furosemide total 1st week dose in NC group was 191±20,3mg, in DC group - 398±18,7mg, duration of NTG infusion - 3,5±0,4 vs 0,77±0,08 days (p<0,001), Dsc - in 9,4±1,3 and 11,4±1,5 days (all p<0,05). AKIN rate was correspondingly 17,3% and 22,8% (p<0,05). Other endpoints see in image

Conclusions:

In ADHF patients ≪nitrate centered≫ strategy compared to moderate ≪diuretic centered≫ one provides more pronounced progressive decongestion assessed by NT-pro-BNP lowering. It is associated with less marked early transient worsening of renal function (Cystatin C) and tubular damage (NGAL) followed by more pronounced improvement of both from baseline in ≪nitrate centered≫ group.

References:

* - p<0,05, ** - p<0,01 compared to D1; # - p<0,05, ## - p<0,01 compared to Group DC

DOI: 10.3252/pso.eu.53era.2016