

# Arbutamine

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**=Abstract=**

**Safety and efficacy of arbutamine stress echocardiography**

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**Background** : Exercise and pharmacologic stress echocardiography are widely used for detecting coronary artery disease. Arbutamine is a new synthetic mild I-receptor and -receptor agonist developed specifically for stress echocardiography. Arbutamine is superior to dobutamine owing to its enforced chronotropic action than that of dobutamine. We intended to know safety and efficacy of arbutamine stress echocardiography in inducing myocardial ischemia and detecting coronary artery disease.

**Methods** : We underwent arbutamine stress echocardiography on 52 patients, dobutamine stress echocardiography in 35 patients. Alteration of blood pressure, heart rate, regional wall motion on echocardiography were evaluated. Sensitivity and specificity were determined by coronary angiography for 61 patients(Arbutamine: 31, Dobutamine : 30)

**Results** : 1) Hemodynamic alterations respect to stress agents

	Baseline	Maximal	Baseline	Maximal Interval for
	Blood pressure	Blood pressure	Heartrate	Heart rate maximal heart rate
Arbutamine	122/70mmHg	138/72mmHg	69BPM	137BPM 8.2 min*
Dobutamine	126/73mmHg	136/77mmHg	74BPM	102BPM 11.4 min*

(\* p < 0.05)

2) Comparison of Arbutamine and Dobutamine in sensitivity

Sensitivity(Specificity)	Side effects	Atropine
Arbutamine 80.1% (90%)	33(63.5%)	8(15.4%)
Dobutamine 78.2% (71.4%)	21(60%)	7(20%)

3) Side effects of stress agents

Hypotension	Palpitation,	tremor	Arrhythmia	Chest pain
Arbutamine 15(28.8%)*	4(7.7%)*	21(40.4%)	8(9.2%)	
Dobutamine 3(8.6%)*	9(25.7%)*	12(34.3%)	5(5.7%)	

(\* p < 0.05)

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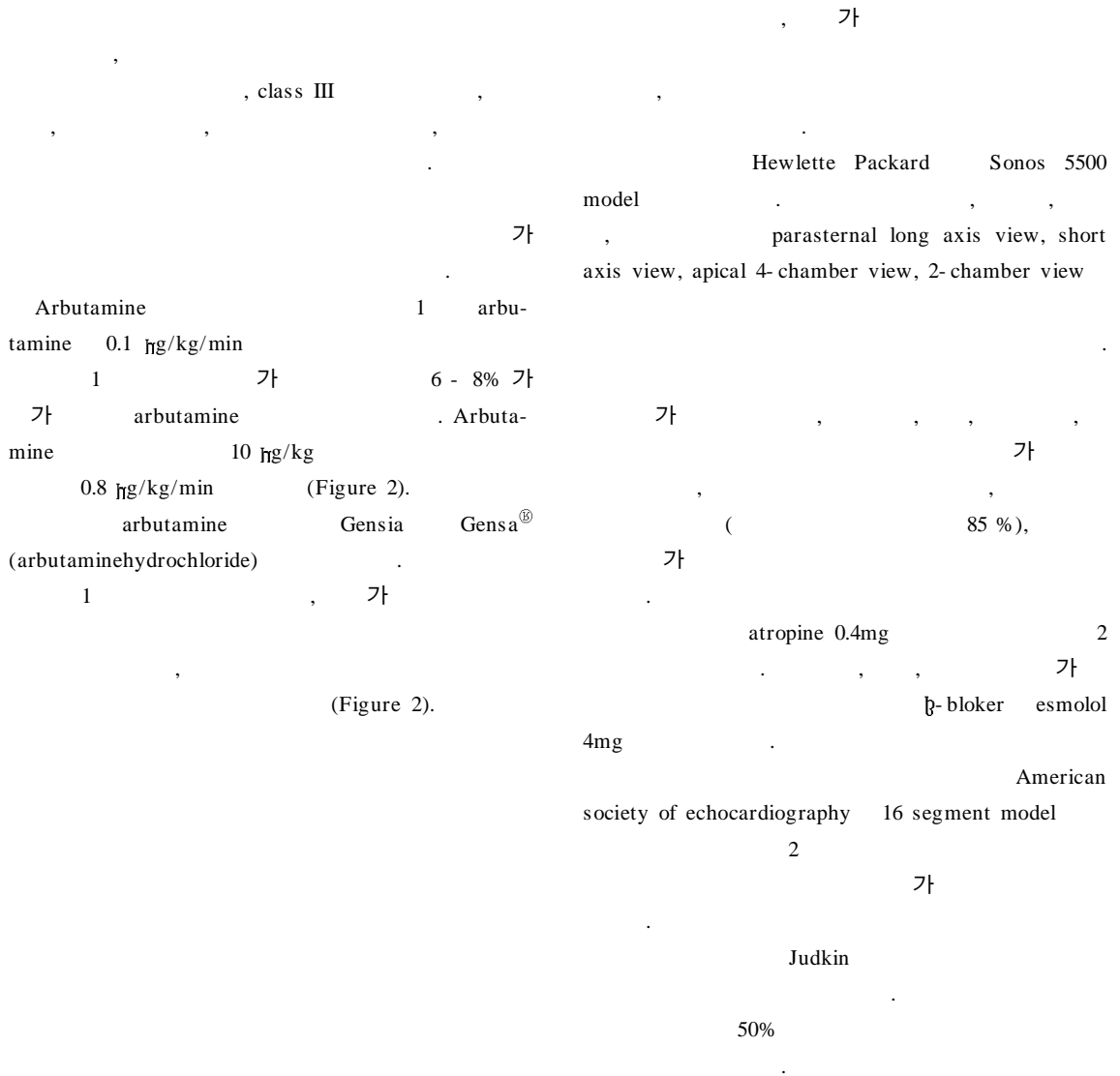
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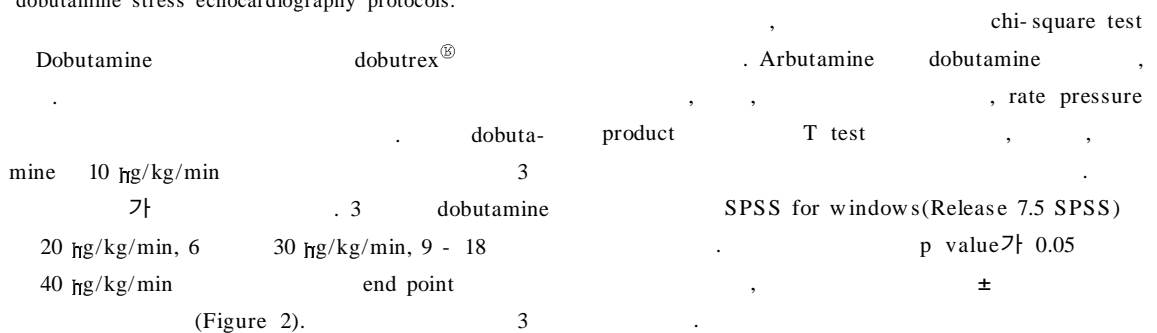
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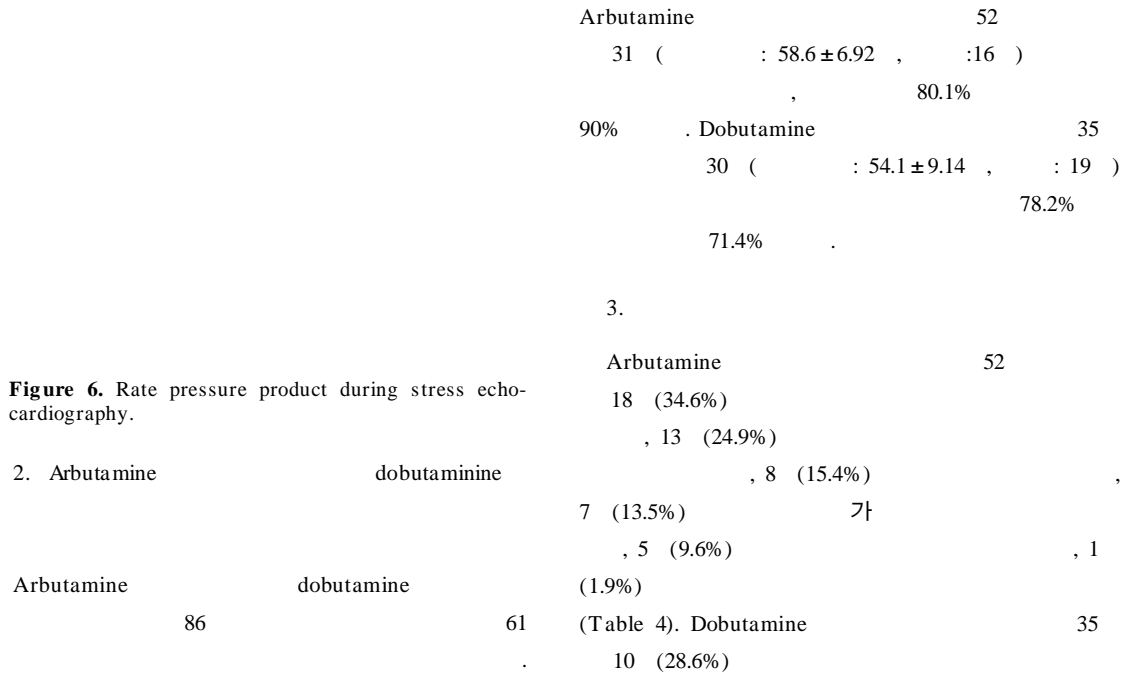




**Figure 2.** Schematic presentation of arbutamine and dobutamine stress echocardiography protocols.







**Table 2. Timegap for maximal heart rate, frequency of patients used atropine and - blocker**

	Timegap for target heart rate	Atropine	- blocker
Arbutamine	8.2 min*	8 (15.4%)	13 (25%)
Dobutamine	11.4 min*	7 (20%)	7 (20%)

Atropine was used to achieve maximal heart rate in despite of maximal dosage of stress agents. - blocker was used to relieve severe chest pain, palpitation, tremor. \* p<0.05

**Table 3. Sensitivity, specificity, frequency of side effect more than 1 kind during stress echocardiography**

	Sensitivity	Specificity	Side effect
Arbutamine	80.1%	90%	33 (63.5%)
Dobutamine	78.2%	71.4%	21 (60%)

**Table 4. The reason why tests stopped on both group**

	Arbutamine	Dobutamine
Reach at target heart rate	18 (34.6%)	9 (25.7%)
NWMA	14 (26.9%)	12 (34.3%)
Anginal Chest pain	8 (15.4%)	5 (14.3%)
Maximal dose	6 (11.5%)	2 (5.7%)
Arrhythmia	0	2 (5.7%)
Hypertension	1 (1.9%)	2 (5.7%)
Hypotension	5 (9.6%)	1 (2.9%)

(NWMA, New or worsening wall motion abnormality, p : all nonspecific)

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β-blocker , arbutamine  
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**Table 5. Common side effects of both stress agents**

	Hypotension	Palpitation	Arrhythmia	Chest pain
Arbutamine	15(28.8%)*	4 (7.7%)*	21(40.4%)	8(15.4%)
Dobutamine	3(8.6%)*	9 (25.7%)*	12(34.3%)	5(5.7%)

\* p<0.05

**Table 6. Common arrhythmias of stress agents**

	PVC	PAC	Short run VT
Arbutamine	14 (26.9%)	8(15.4%)	0 (0%)
Dobutamine	8 (22.9%)	4(11.4%)	2(5.7%)

PVC, premature ventricular contraction; PAC, premature atrial contraction; VT, ventricular tachycardia, p > 0.05

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arbutamine  
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dobutamine

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