

表1 海外主要データベースでの手術内訳(%)

	JACVSD 2005-06 N=21,243	EuroSCORE 1995 N=19,030	STS 1998-99 N=188,192
isolated CABG	34.3	63.6	81.2
other than isolated CABG	66.7	36.4	18.6
thoracic aorta	22.0	2.4	0.9

例を用いて risk model を作成した。術前状態の分布を表2に示す。平均年齢は66.5歳で, urgent, emergent といった非予定手術が3割以上を占めている。手術部位は上行大動脈と弓部がそれぞれ半分近くとなっている(重複を含む)。胸腹部は8%であった。生データとしての結果を表3に示す。30日死亡率が6.8%, 手術死亡率(院内死亡率)は8.6%であり, 世界的に見てもきわめて良好な数字である。世界をリードするような一つの施設からだけの成績であればこれ以上の成績は報告されているが<sup>28)</sup>, 全国的な統計ではこれほどまでに良好な成績を報告したものは日本以外にはないと思われる<sup>29)</sup>。

表4に作成した risk model から算出した odds ratio を示す。30-day operative mortality, いわゆる手術死亡あるいは院内死亡における odds ratio に大きく影響しているものは, 緊急手術 emergent or salvage, 術前クレアチニンが3.0 mg/dl 以上であったもの, 予期せぬ CABG を追加したものの, 左冠動脈主幹部病変などであった(表4)。さらに詳細なデータをアメリカ心臓病学会で公表した<sup>30)</sup>。

## G. リスク calculator: JapanSCORE

このような risk model をもとに EuroSCORE と同様なリスク calculator を単独冠動脈バイパス手術, 弁膜症手術, 大血管手術の3つに分けて作

表2 術前状態の分布

characteristics	all aorta study records n = 4,707
age, mean (SD), year	66.5 (12.8)
men, %	67.5
status, %	
urgent	7.5
emergent, salvage	25.5
chronic lung disease, %	11
renal failure, %	9.2
AMI, %	3.2
reoperation, %	7.9
rapture or malperfusion, %	9.7
range of replacement, %	
root	10.1
ascending	46.6
arch	44.4
distal arch	20.6
descending	26.9
thoracoabdominal	8.1

表3 リスクモデル作成時のアウトカム

胸部大動脈手術	(N = 4,707)
30日死亡	6.7%
手術死亡	8.6%
死亡+合併症	30.1%

成した。EuroSCORE の名前を借りて, JapanSCORE (Japanese System for Cardiac Operative Risk Evaluation) と命名した。JACVSD のホームページから, データ入力のためのサイトに入ると1ページ目に出てきて24時間いつでも利用できる。ただし, 現時点では JACVSD に参加した施設でなおかつ前年の入力が100%完了した施設でないと利用できないこととなっている。今後この規制を緩和してより多くの人々が自由に利用できるような仕組みにしたいと思っている。

## むすび

2000年から始まった日本心臓血管外科手術デ

表4 odds ratio

variables	30-day mortality		30-day operative mortality	
	OR	95%CI	OR	95%CI
status (urgent)	2.44	1.56-3.82	1.81	1.18-2.77
status (emergent, salvage)	3.90	2.89-5.26	3.67	2.80-4.81
sex (men)	1.72	1.29-2.29	1.63	1.26-2.10
age, year	1.02	1.01-1.03	1.02	1.01-1.03
reoperation	2.02	1.36-2.99	2.30	1.61-3.28
AMI	2.56	1.55-4.24	2.18	1.36-3.50
neuro logical impairment	2.29	1.56-3.35	1.82	1.25-2.63
CABG unexpected	2.74	1.29-5.84	2.58	1.25-5.34
rapture or malperfusion	2.24	1.63-3.06	2.10	1.57-2.81
renal failure	1.51	1.07-2.12		
preop creatinine (1.5-3.0)			2.35	1.71-3.23
preop creatinine (3.0-)			2.97	1.91-4.61
chronic lung disease (moderate, severe)	2.21	1.35-3.62	1.97	1.25-3.13
left main disease			2.38	1.24-4.57
congestive heart failure	1.55	1.03-2.35		
LV function (bad)	2.58	1.44-4.64	2.05	1.15-3.67
anticoagulants			1.60	1.07-2.38
history of resuscitation	3.03	1.56-5.87	1.81	1.03-3.18
diabetes treatment			1.55	1.04-2.33

データベースは徐々に成長し、リスクモデルが完成し、大血管手術としては世界初のリスクcalculatorが開発されるにいたった。今後もこのデータベースが発展し、日本の心臓外科学だけでなく医療界全体に大きく貢献していくことを期待している。

#### 文献

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