

Acute Skeletal Muscle Wasting in Critical Illness

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文献の読み方のポイント

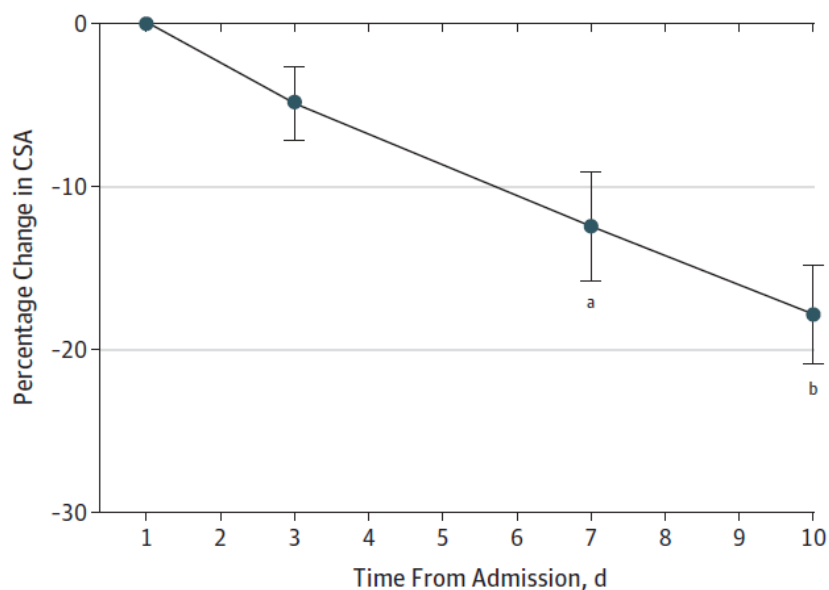
患者背景因子を丁寧によむ

Table. Baseline Characteristics of Patients

	All Patients (N = 63)	Serial Muscle Biopsies and Ultrasound (n = 42)	Muscle Ultrasound Alone (n = 21)	Stable Isotope Incorporation (n = 11)
Age, mean (95% CI), y	54.5 (50.0-59.1)	55.3 (49.4-61.1)	53.1 (45.4-60.1)	62.7 (50.1-75.4)
Male sex, No. (%)	37 (58.7)	30 (71.4) ^a	7 (31.3)	9 (81.8) ^a
Hospital length of stay prior to ICU admission, median (range), d	1 (1-45)	1 (1-6)	1 (1-45)	1 (1-6)
Period ventilated, median (range), d	10 (2-62)	8.5 (2-62)	10 (4-24)	12 (2-62)
ICU length of stay, median (range), d	16 (7-80)	15.5 (7-80)	17 (7-73)	18 (8-80)
Hospital length of stay, median (range), d	30 (11-334)	29.5 (11-212)	33 (13-334)	50 (17-212)
APACHE II score, mean (95% CI)	23.5 (21.9-25.2)	23.3 (21.3-25.3)	24 (20.1-27.2)	27 (22.9-31.3)
SAPS II score, mean (95% CI)	45.5 (41.8-49.3)	43.4 (39.2-47.6)	49.7 (42.0-57.4)	47 (39.6-54.4)
Survival, No. (%)				
ICU	61 (97)	40 (95)	21 (100)	10 (91)
Hospital	56 (89)	37 (88)	19 (90)	9 (82)
Renal replacement therapy, No. (%)	19 (30.2)	13 (31.0)	6 (29.0)	4 (36.4)
Use of neuromuscular blocking agents, median (range), d	0 (0-6)	0 (0-6)	0 (0-5)	0 (0-6)
Hydrocortisone dose, median (range), mg ^b				
Day 1	0 (0-800)	0 (0-800)	0 (0-400)	200 (0-800)
Total by day 10	0 (0-4533)	0 (0-4533)	0 (0-3360)	450 (0-4533)
Statin use, No. (%)	11 (17.4)	7 (16.7)	4 (19)	1 (9.1)
Blood glucose level, median (range), mmol/L	7.4 (5.1-11.4)	7.3 (5.1-10.3)	7.6 (5.6-11.4)	7.9 (6.1-9.5)
Cumulative insulin, median (range), IU	93 (0-1704)	90 (0-1704)	125 (0-817)	90 (0-1704)
Admission diagnosis, No. (%)				
Sepsis	31 (49.2)	19 (45.3)	12 (57.1)	6 (54.5)
Trauma	16 (25.4)	13 (31.0)	3 (14.3)	4 (36.4)
Intracranial bleeding	5 (7.9)	4 (9.5)	1 (4.8)	0
Acute liver failure	5 (8.0)	3 (7.0)	2 (9.5)	1 (9.1)
Cardiogenic shock	6 (9.5)	3 (7.1)	3 (14.3)	0
Comorbidities, No. (%)				
Chronic obstructive pulmonary disease	9 (14.3)	7 (16.7)	2 (9.5)	2 (18)
Ischemic heart disease	10 (15.9)	7 (16.7)	3 (14.3)	1 (9.1)
Hypertension	13 (19.0)	8 (19.0)	5 (23.8)	1 (9.1)
Diabetes mellitus	8 (12.7)	6 (14.3)	2 (9.5)	1 (9.1)
Liver cirrhosis	6 (9.5)	4 (9.5)	2 (9.5)	1 (9.1)
Chronic pancreatitis	2 (3.2)	1 (2.4)	1 (4.7)	0
Hematological disease	4 (6.3)	2 (4.8)	2 (9.5)	0
Obesity	3 (4.8)	2 (4.8)	1 (4.7)	0
Previous cerebrovascular accident	1 (1.6)	1 (2.4)	0	0
Renal impairment	2 (1.6)	1 (2.4)	1 (4.7)	0
Crohn disease	1 (1.6)	0	1 (4.7)	0
Thyroid disease	3 (4.8)	1 (2.4)	2 (9.5)	0

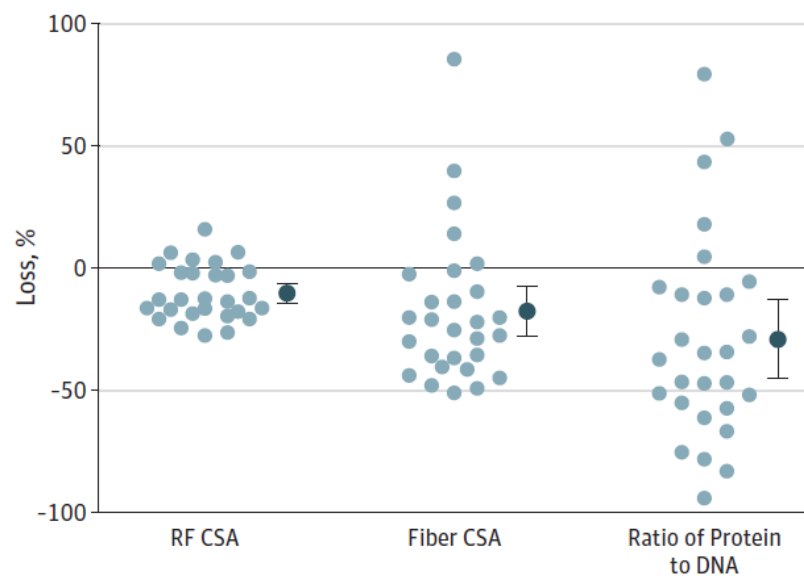
Figure 2. Measurements of Muscle Wasting During Critical Illness

A Change in rectus femoris (RF) cross-sectional area (CSA) over 10 d



No. of patients 62 57 60 62

B Measures of muscle wasting in patients assessed by all 3 measures on both day 1 and day 7 (n=28)



Summary data (dark circles) are expressed as medians and 95% confidence intervals.

^a $P = .002$ for change from day 1 to day 7 by repeated measures 2-way analysis of variance.

^b $P < .001$ for change from day 1 to day 10.

Aの統計解析方法は？

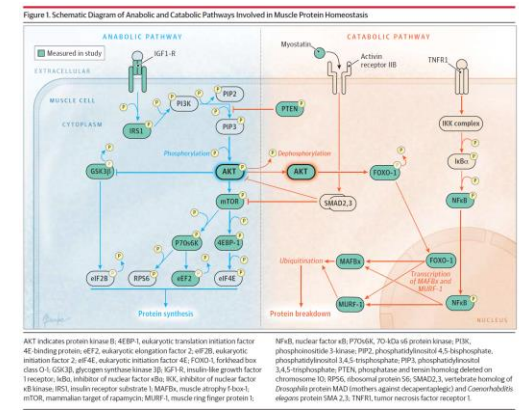
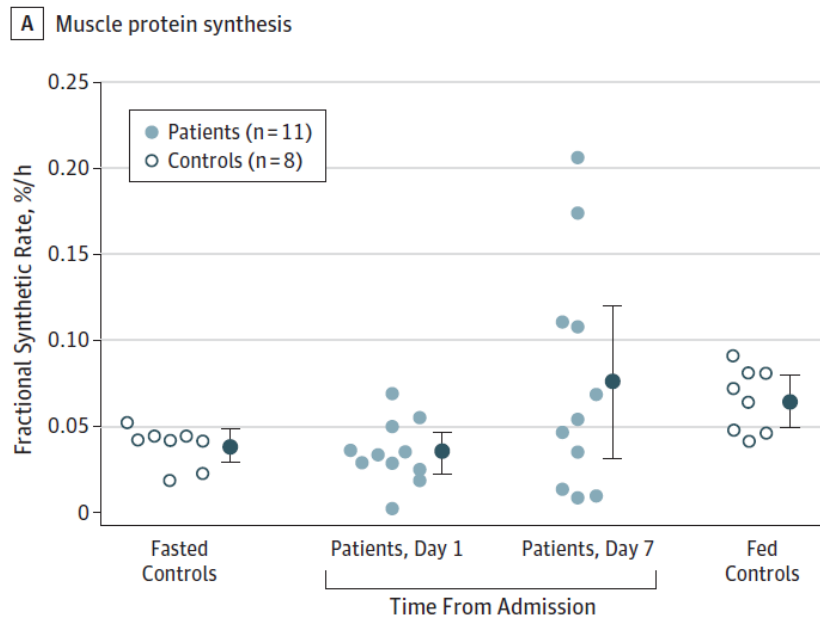
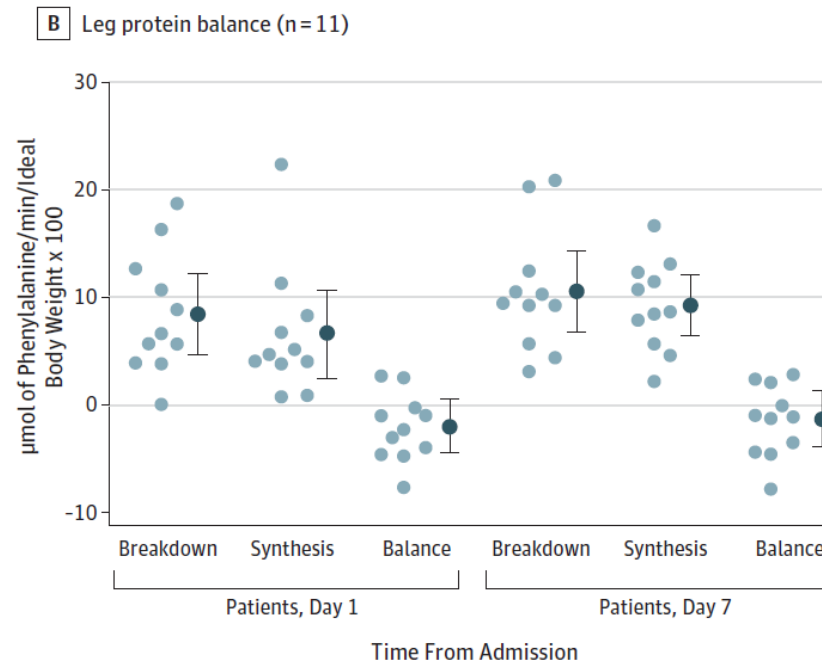


Figure 3. Muscle Protein Synthesis and Leg Protein Balance



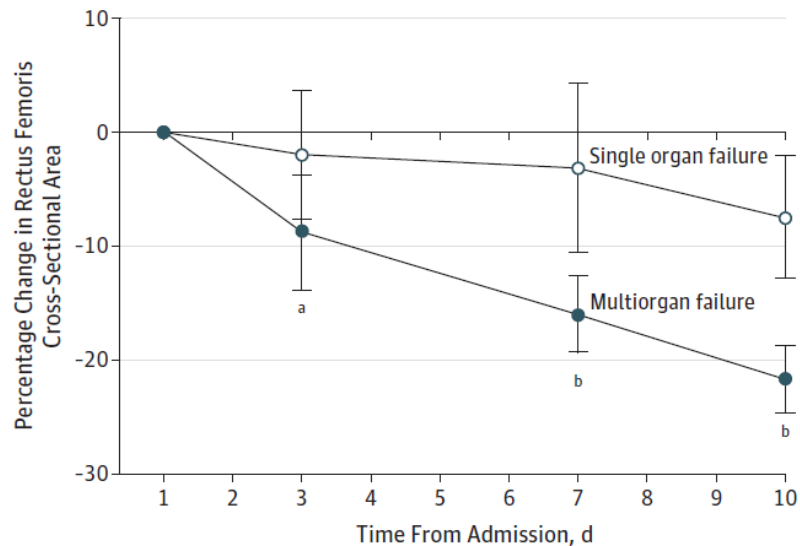
Summary data (dark circles) are expressed as medians and 95% confidence intervals. *P* values calculated using the Wilcoxon signed rank test. In part A, the comparison between fasted patients and controls yielded a *P* value of .57; the comparison between patients on days 1 and 7 yielded a *P* value of .03; and the



comparison between fed patients and controls yielded a *P* value of .30. In part B, the comparison between breakdown, synthesis, and balance at 1 day yielded a *P* value of .05; at 7 days, the *P* value was .30.

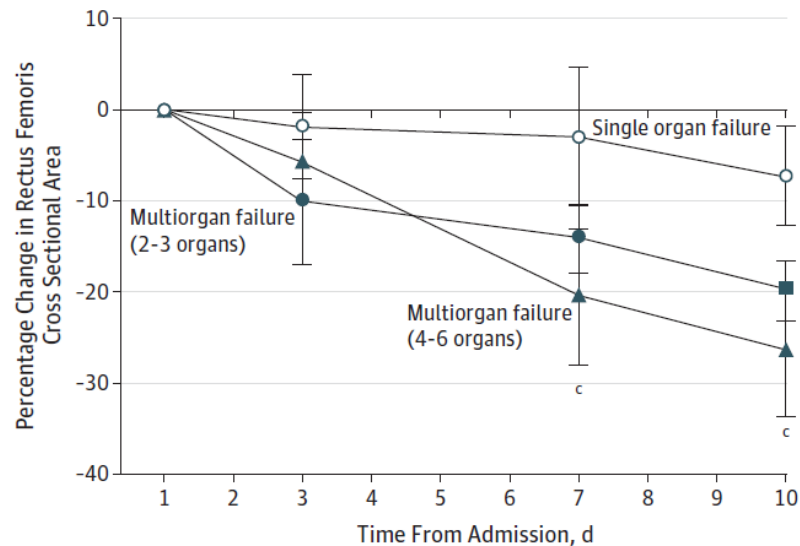
Figure 5. Measurements of Muscle Wasting During Critical Illness by Organ Failure

A Single vs multiorgan failure



No. of patients	1	3	7	10
Single organ failure	15	14	15	15
Multiorgan failure	47	43	45	47

B Single vs multiorgan failure



No. of patients	1	3	7	10
Single organ failure	15	14	15	15
Multiorgan failure				
2-3 Organs	33	31	32	33
4-6 Organs	14	12	13	14

Data are expressed as medians and 95% confidence intervals.

^a $P=.03$ for change from day 1 to day 3 in multiorgan failure vs single organ failure.

^b $P<.001$ for change from day 1 to day 7 and day 1 to day 10 in multiorgan failure vs single organ failure.

^c $P<.001$ for difference between failure of 2-3 organs and 4-6 organs from day 1 to day 7 and day 10.

Aの統計解析方法は？