Impact of Underlying Diseases on the Prognosis in Patients with In-hospital Cardiac Arrest; from the Japanese Registry of CPR for In-hospital Cardiac Arrest (J-RCPR)

Taro Sasaoka[1], Naohiro Yonemoto[2], Hiroyuki Yokoyama[1], Hiroshi Nonogi[1] and J-RCPR investigators

[1]Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center, Suita, Japan
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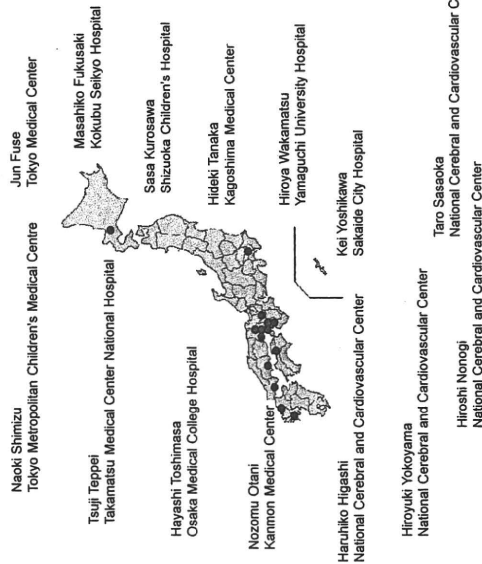
No Conflict of Interest to Disclose

Background

- In-hospital cardio pulmonary arrest (IHCPA) is an important factor of all cause of death.

- Although National Registry of Cardio Pulmonary Resuscitation (NRCPR) from United States has reported the rate of discharge was 18%, the impact of underlying disease on IHCPA remains unknown.

Purpose

- The purpose of this study was to investigate whether there are differences in survival rate between cardiovascular disease and non-cardiovascular disease in patients with IHCPA.
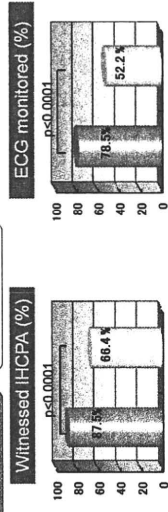
Methods

- A total of 491 adults with IHCPA were registered prospectively from 11 hospitals in JRCPR from January 2008 to December 2009.

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- They are divided in two groups according to the underlying disease, hospitalized for the treatment of cardiovascular disease (Group C, n=265, including ACS/Arrhythmia/Heart failure/Aortic diseases), and non-cardiovascular disease (Group N, n=226).
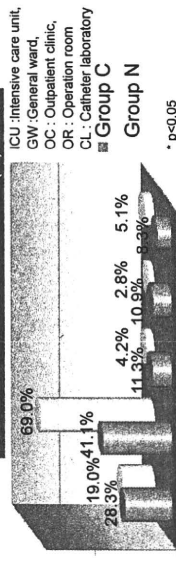
Results

- Baseline characteristics of sex, age were not significantly different in Group C and Group N.

IHCPA patients (11 hospitals) (n=491)

Group C (Cardiovascular disease) n=265

Group N (Non-Cardiovascular disease) n=226

Witnessed IHCPA (%)
p<0.0001

87.5% 66.4%

Group C   Group N

- Percentages of witnessed IHCPA and ECG monitored were significantly higher in Group C than Group N.

ECG monitored (%)
p<0.0001

78.5% 52.2%

Group C   Group N

Place of IHCPA confirmed (%)

ICU: intensive care unit, GW: General ward, OC: Outpatient clinic, OR: Operation room, CL: Catheter laboratory

Group C   Group N   * p<0.05

ICU* 19.0% 41.1% GW* 28.3% 11.3% OC* 10.9% OR or CL* 4.2% 2.8% 5.1% Others 69.0% 8.3%

- Patients in Group C showed significantly higher prevalence of IHCPA confirmed in ICU, OC, OR or CL. On the other hand, Group N showed higher rate of IHCPA confirmed in GW.
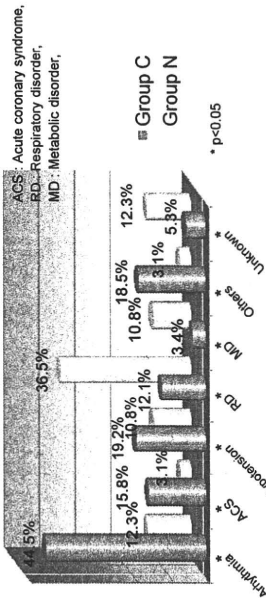
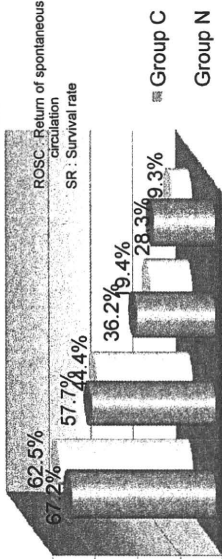### IHCPA occurrence within 2 days of admission (%)
p<0.0001

46.0% 30.1%
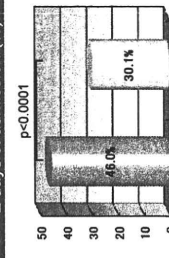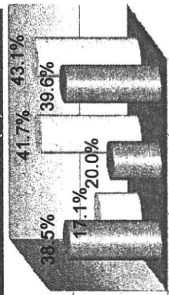
Group C   Group N

- The percentages of IHCPA occurrence within 2days of hospital admission was significantly higher in Group C than Group N.

First documented rhythm of IHCPA (%)

VF/VT* Aystole* PEA

Group C   Group N

VF/VT* 38.5% 17.1% Aystole* 41.7% 39.6% PEA 20.0% 43.1%

PEA: pulseless electrical activity. * p<0.001

- Patients in Group C showed higher prevalence of VF/VT as first documented rhythm, lower prevalence of Asystole than Group N, whereas there was no difference in PEA.

Direct cause of IHCPA (%)

Group C   Group N   * p<0.05

Arrhythmia* 44.5% 5.1% ACS* 15.8% 12.3% Hypertension* 19.2% 10.8% RD* 10.8% 12.1% MD* 36.5% 3.4% Others 18.5% 10.8% Unknown 12.3% 5.8% 3.1%

ACS: Acute coronary syndrome, RD: Respiratory disorder, MD: Metabolic disorder,

- Direct causes of IHCPA were significantly different in Group C and Group N.

ROSC and SR after IHCPA (%)

Group C   Group N   * p<0.001

ROSC 67.2% 62.5% SR after 24 hours* 57.7% 47.4% SR after 30 days* 36.2% 39.4% CPC 0 or 1 at 30 days* 28.3% 9.3%

ROSC: Return of spontaneous circulation
SR: Survival rate

- In group C, the rate of survival on 24 hours and 30 days after IHCPA was significantly higher than Group N, even though the rate of return of spontaneous circulation was not significantly different.

- The rate of the favorable neurological function (CPC 1-2) among patients survived at 30 days after IHCPA was also higher in Group C (82.4% vs. 45.9%, p<0.001).

Conclusion

- Patients in Group C showed higher incidence of IHCPA in the early period of hospitalization and VF/VT as first documented rhythm.

- Also, they showed significantly better survival and neurological outcome from IHCPA.

- These results may suggest the importance of intensive care in the early period of hospitalization in patients with cardiovascular disease.

Survival From In-Hospital Cardiac Arrest During Nights and Weekends From Japanese Registry of CPR (JRCPR)

Author Block: Haruhiko Higashi, Natl Cerebral and Cardiovascular Ctr, Suita, Japan; Naohiro Yonemoto, Natl Ctr of Neurology and Psychiatry, Kodaira, Japan; Hiroyuki   Yokoyama, Hiroshi Nonogi , Natl Cerebral and Cardiovascular Ctr, Suita, Japan

Abstract:

[Backgrounds] It has been reported that survival rates from in-hospital cardiac arrest were lower during nights and weekends from the National Registry of Cardiopulmonary Resuscitation (NRCPR). However, available data about in-hospital cardiac arrest is extremely limited and has not been investigated from aspects of time of day and day of week in Japan.

[Methods] The patients with in-hospital cardiopulmonary arrest (CPA) were registered prospectively from 11 hospitals, between January 2008 and December 2009 in Japan. We divided into two groups (Day/evening group and night group) based on the onset time of CPA. Day/evening was defined as 7:00 AM to 10:59 PM and night as 11:00 PM to 6:59 AM. Rate of return of spontaneous circulation (ROSC), survival at 24 hours, and favorable neurological outcomes were compared.

[Results] A total of 358 cases of in-hospital cardiac arrest occurred during day/evening hours (including 274 on weekdays and 84 on weekends), and 133 cases occurred during night hours (including 103 on weekdays and 30 on weekends). Rate of ROSC (70.2% vs. 49.6%; p<.0001), survival at 24 hours (55.3% vs. 36.8%; p<.001), and favorable neurological outcomes (20.9% vs. 8.2%; p<.001) were significantly lower during the night compared with day/evening. Incidence of witnessed CPA and percentage of monitored patients were not significantly different between day/evening and night. However, the prevalence of asystole at first documented pulseless rhythm was higher in night group. During day/evening hours, in contrast to NRCPR, rate of ROSC (71.9% vs. 64.6%; p=0.22), survival at 24 hours (55.8% vs. 53.6%; p=0.80) and favorable neurological outcomes (21.5% vs. 19.0%; p=0.76) were not significantly different between weekdays and on weekends. During night hours, these endpoints were similar between day/evening and night as well as the report from NRCPR.

[Conclusion] According to JRCPR, survival rates from in-hospital cardiac arrest are lower during

nights. Unlike NRCPR, survival rates are similar on weekends in Japanese population.

Author Disclosure Information: H. **Higashi**, None; N. **Yonemoto**, None; H. **Yokoyama**, None; H. **Nonogi** , None.

Survival From In-Hospital Cardiac Arrest During Nights and Weekends From Japanese Registry of CPR(JRCPR)

Haruhiko Higashi[1], Naohiro Yonemoto[2], Hiroyuki Yokoyama[1], Hiroshi Nonogi[1]

[1]Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center, Suita, Japan
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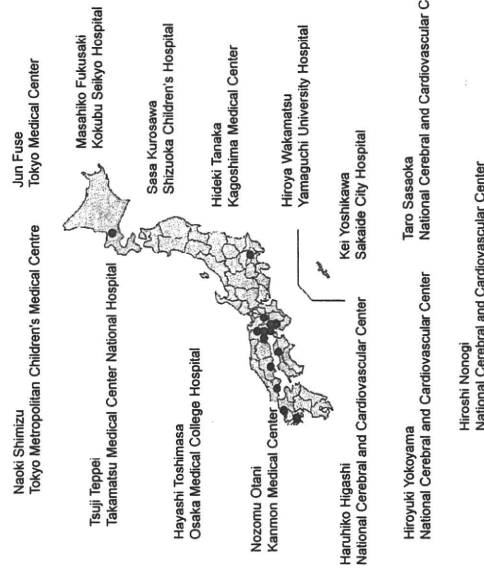**No Conflict of Interest to Disclose**

Background

- It has been reported that survival rates from in-hospital cardiac arrest were lower during nights and weekends from the National Registry of Cardiopulmonary Resuscitation (NRCPR).

- However, available data about in-hospital cardiac arrest is extremely limited and has not been investigated from aspects of time of day and day of week in Japan.

Aim

The aim of this study was to investigate whether there are differences in survival rate between day/evening and night or weekdays and weekends in Japan.

Methods

- The patients with in-hospital cardiopulmonary arrest (CPA) were registered prospectively from 11 hospitals, between January 2008 and December 2009 in Japan.

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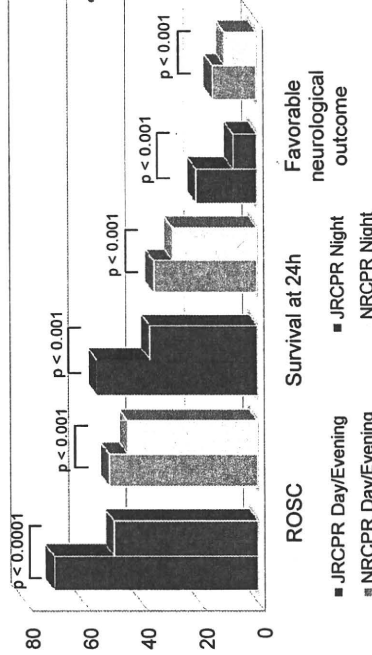National Cerebral and Cardiovascular Center

- We divided into two groups (Day/evening group and night group) based on the onset time of CPA.

- Day/evening was defined as 7:00 AM to 10:59 PM and night as 11:00 PM to 6:59 AM.

- Rate of return of spontaneous circulation (ROSC), survival at 24 hours, and favorable neurological outcomes were compared.

Results

- A total of 358 cases of in-hospital cardiac arrest occurred during day/evening hours (including 274 on weekdays and 84 on weekends), and 133 cases occurred during night hours (including 103 on weekdays and 30 on weekends).

- Rate of ROSC (70.2% vs. 49.6%; p<.0001), survival at 24 hours (55.3% vs. 36.8%; p<.001), and favorable neurological outcomes (20.9% vs. 8.2%; p<.001) were significantly lower during the night compared with day/evening.

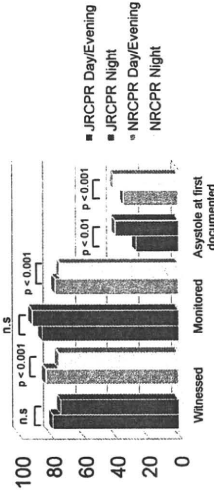**Cardiac Arrest Outcomes by Day/Evening vs Night**

- During day/evening hours, in contrast to NRCPR, rate of ROSC (71.9% vs. 64.6%; p=0.22), survival at 24 hours (55.8% vs. 53.6%; p=0.80) and favorable neurological outcomes (21.5% vs. 19.0%; p=0.76) were not significantly different between weekdays and on weekends.

Cardiac Arrest Outcomes by Weekdays vs Weekends (Day/Evening)

- During night hours, these endpoints were similar between day/evening and night as well as the report from NRCPR.

Cardiac Arrest Outcomes by Weekdays vs Weekends (Night)

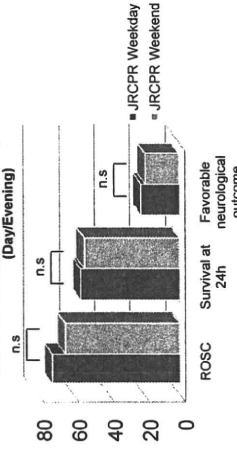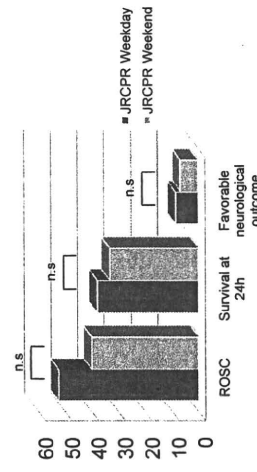**Cardiac Arrest Characteristics by Day/Evening vs Night**

- Incidence of witnessed CPA and percentage of monitored patients were not significantly different between day/evening and night. However, the prevalence of asystole at first documented pulseless rhythm was higher in night group.

NRCPR data: Peberdy MA, et. al. Survival from in-hospital cardiac arrest during nights and weekends. JAMA 2008;299(7):785-792.

Conclusion

According to JRCPR, survival rates from in-hospital cardiac arrest are lower during nights. Unlike NRCPR, survival rates on weekdays are similar to weekends in Japanese population.

The Detail of Individual Cardiovascular Disease on Inhospital Csiardiopulmonary Arrest; from the Japanese Registry of CPR for Inhospital Cardiac Arrest (J-RCPR)

Author Block Taro Sasaoka, Natl Cerebral and Cardiovascular Ctr, Osaka, Japan; Naohiro Yonemoto, Natl Ctr of Neurology and Psychiatry, Tokyo, Japan; Hiroyuki Yokoyama, Hiroshi Nonogi, Natl Cerebral and Cardiovascular Ctr, Osaka, Japan; J-RCPR Investigators

Abstract:

Background: In-hospital cardiopulmonary arrest (IHCPA) is still a serious problem for cardiologists; recent studies have shown almost one half of all the IHCPA patients are based on cardiovascular diseases. However, the detail of individual cardiovascular disease remains unknown.

Method: A total of 491 consecutive adults with IHCPA were registered in J-RCPR as a multicenter trial. Among them, 222 (45%) patients were hospitalized with the treatment of cardiovascular diseases; acute coronary syndrome (ACS, Group A, n=78), heart failure (HF, Group B, n=56), and arrhythmia (Group C, n=77).

Result: Baseline characteristics of sex, age, and consciousness before IHCPA did not show significant difference in each group. Compared with other groups, Group B showed lower rate of ECG monitoring (Group A: 90%, Group B: 70%, Group C: 95%, p<0.001) and the witnessed IHCPA (95%, 75%, 91%, p<0.001), higher rate of IHCPA in general ward (19%, 63%, 38%. p<0.001). The percentage of IHCPA within 2 days of hospitalization was significantly higher in Group A (61% vs. 39% vs. 43%, p<0.05). Interestingly, the prevalence of first documented rhythm and the first treatment of IHCPA were not different in each group; however, the rate of return of spontaneous circulation (ROSC) is significantly higher in Group C (67%, 55%, 92%, p<0.001) and survival rate after 30days of IHCPA was significantly lower in Group B (41%, 27%, 52%, p<0.001).

Conclusion: ACS patients showed higher rate of IHCPA within 2days of hospitalization; thus, we need to pay special attention to those patients in acute phase of hospitalization. In addition, the fact that patients with HF showed poor prognosis implies ECG monitoring and possible intensive care may lead to better outcome.

	ACS (Group A)	Heart Failure (Group B)	Arrhythmia (Group C)	p-value
N	78	56	77	
Witness of IHCPA	95%	73%	91%	<0.0001
First documented rhythm at IHCPA				
Vf or VT	44%	36%	52%	NS
Asystole	22%	23%	14%	NS
PEA	35%	39%	34%	NS
IHCPA within 2days of hospitalization	63%	43%	44%	<0.05
Place of IHCPA confirmed				
General Ward	19%	63%	38%	<0.0001
Intensive Care Unit	40%	21%	29%	<0.1
ROSC	67%	55%	92%	<0.0001
Outcome 30 days after IHCPA				
Death	59%	73%	48%	<0.0001
Discharge	32%	9%	44%	<0.0001
Favorable Neurological outcome (among pts survived at 30 days)	78%	67%	79%	N.S.

The Detail of Individual Cardiovascular Disease on In-hospital Cardiopulmonary Arrest; from the Japanese Registry of CPR for In-hospital Cardiac Arrest (J-RCPR)

Taro Sasaoka[1], Naohiro Yonemoto[2], Hiroyuki Yokoyama[1], Hiroshi Nonogi[1] and J-RCPR investigators

[1]Department of Cardiovascular Medicine, National Cerebral and Cardiovascular Center, Suita, Japan
[2]Department of Epidemiology and Biostatistics, National Center of Neurology and Psychiatry, Kodaira, Japan

No Conflict of Interest to Disclose

Background

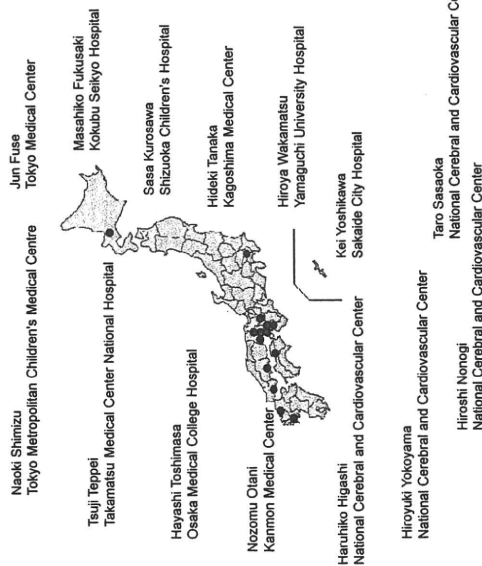- In-hospital cardiopulmonary arrest (IHCPA) is still a serious problem.
- Some studies have shown almost one half of all the IHCPA patients are based on cardiovascular diseases. However, the detail of individual cardiovascular disease remains unknown.

Purpose

- The purpose of this study was to investigate whether there is a difference in survival rate in individual cardiovascular disease among patients with IHCPA.

Methods

- A total of 491 adults with IHCPA were registered prospectively from 11 hospitals in JRCPR from January 2008 to December 2009.

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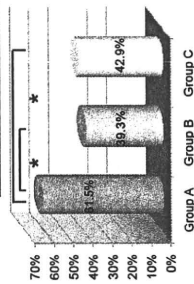
Hiroshi Nonogi
National Cerebral and Cardiovascular Center

- Among those patients registered, 222 (45%) patients were hospitalized with the treatment of cardiovascular diseases; acute coronary syndrome (ACS, Group A, n=78), heart failure (HF, Group B, n=56), and arrhythmia (Group C, n=77).

Results

- Baseline characteristics of sex, age were not significantly different in each group.

IHCPA patients hospitalized With cardiovascular disease (n=222)
- Group A (ACS) n=78
- Group B (Heart Failure) n=56
- Group C (Arrhythmia) n=77

First documented rhythm of IHCPA (%)

- In group C, percentages of VF/VT as first documented rhythm was tended to be higher than Group B.
- Percentages of Asystole and PEA were not different in each group.

PEA : pulseless electrical activity

IHCPA occurrence within 2 days of admission (%)


* p<0.01

- The percentage of IHCPA within 2 days of hospitalization was significantly higher in Group A than Group B and Group C.
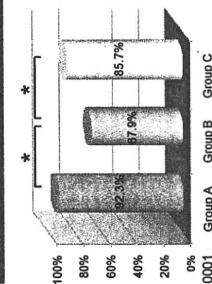
Place of IHCPA confirmed (%)

* p<0.05
# p<0.1
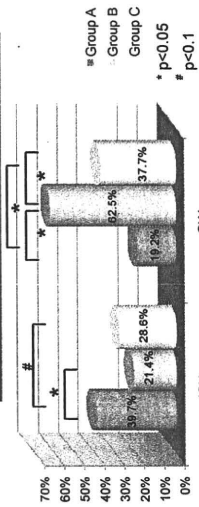
- Percentages of IHCPA confirmed at ICU was significantly higher in Group A than Group B and tended to be higher than Group C.
- Group B patients showed significantly higher prevalence of IHCPA confirmed in general ward than Group A and group C.

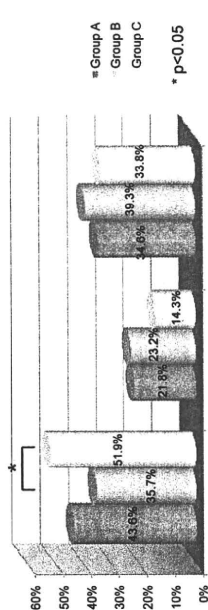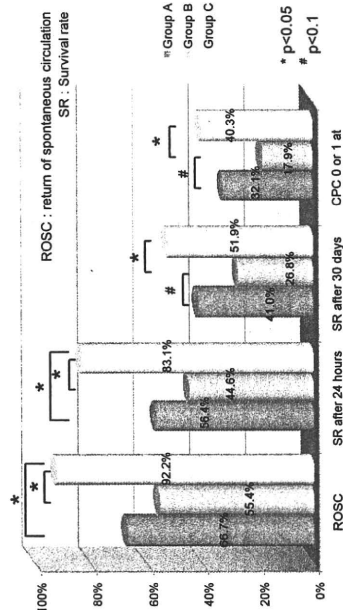### Witnessed IHCPA (%)

* p<0.0001
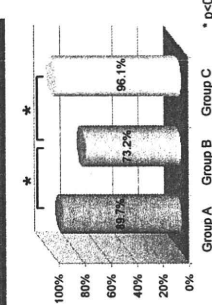
ECG monitored (%)

- Percentages of witnessed IHCPA was significantly lower in Group B than Group A and Group C.
- Number of patients ECG monitored was also significantly smaller in Group B than Group A and C.

ROSC and SR after IHCPA (%)

* p<0.05
# p<0.1

ROSC : return of spontaneous circulation
SR : Survival rate

- Patients in Group C showed significantly higher rate of ROSC and SR after 24 hours than Group A and Group B.
- The percentages of SR after 30days and favorable neurological function (CPC0 or 1) after IHCPA was significantly lower in Group B than Group and tended to be lower than Group A.

Conclusion

- ACS patients showed higher rate of IHCPA within 2days of hospitalization. Thus, we need to pay special attention to ACS patients in acute phase of hospitalization.
- In addition, we found the difference in outcome after IHCPA; HF patients showed poor prognosis compared with other groups.
- Further studies are necessary to explore the mechanism of these findings.

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- J-Hypo
- J-RCPR

J-Hypo

抄録・スライド

Relationship between favorable neurological outcome and time interval from collapse to return of spontaneous circulation in patients treated with hypothermia: J-PULSE-Hypo

Taketomo Soga, Ken Nagao, Hiroyuki Yokoyama, Naohiro Yonemoto, Hiroshi Nonogi, J-PULSE-Hypo investigaters

Background

The early defibrillation using automatic external defibrillation (AED) improved likelihood of survival for patients with out-of-hospital ventricular fibrillation (VF), but the neurological intact survival rate was about 15%. We investigated the relationship between neurological benefits and time interval from collapse to return of spontaneous circulation (ROSC) in patients treated with hypothermia.

Methods

We did a multicenter observational study of hypothermia for unconscious adult patients with ROSC after out-of-hospital cardiac arrest.

Results

Of the 452 unconscious adult patients treated with therapeutic hypothermia, 435 who were cooled to 32°C to 34°C were included; 341 were VF arrest (VF group) and 94 were non-VF arrest (non-VF group). The VF group had a higher frequency of favorable neurological outcome than the non-VF group (63.7% vs. 27.7%, p<0.0001). The favorable neurological outcome of VF group decreased in stepwise fashion across the increasing quartiles of the collapse-to-ROSC interval. The collapse-to-ROSC interval cutoff value of 27.5 min had an accuracy of 72.2% for identification of a favorable neurological outcome. A frequency of favorable neurological outcome was 81.5% in patients who achieved ROSC within 27.5 minutes after VF cardiac arrest.

Conclusions

In patients undergoing mild hypothermia after ROSC, time interval from collapse to ROSC was an independent predictor for a favorable neurological outcome. Further research is needed in patients with prolonged CPR of 27.5 min or longer.

Early Induction of Hypothermia Using Intravenous Ice-cold Fluids Contributes Neurological Outcomes for patients with Out-of-hospital VF Cardiac Arrest: J-PLUSE-Hypo Registry

Background: Animal studies showed that the sooner cooling is initiated after return of spontaneous circulation (ROSC) from cardiac arrest, the better the outcome. In clinical cases, although intravenous ice-cold fluids cannot be used to reach a target core temperature of 34°C or less and to maintain hypothermia, it can be conducted rapidly, easily and inexpensively.

Methods: We conducted a multicenter observational study of therapeutic hypothermia for unconscious adult patients with return of spontaneous circulation after out-of–hospital cardiac arrest (J-PLUSE-Hypo Registry). The J-PLUSE-Hypo committee entrusted each hospital with the timing of cooling, cooling methods, target temperature, duration, and rewarming rate.

Results: Of the 452 patients treated with hypothermia after ROSC from out-of-hospital cardiac arrest, 300 who were cooled to 34°C after ROSC from out-of-hospital cardiac arrest due to ventricular fibrillation were included; 157 received intravenous infusion of ice-cold fluids as an induction of hypothermia (IV group). 143 received hypothermia without intravenous cold fluid (Non-IV group). The time interval from collapse to initiation of the cooling was shorter in the IV group than in the Non-IV group (a median; 53 minutes vs. 165 minutes, p<0.001). The IV group had higher frequency of favorable neurological outcome than the Non-IV group (69% vs. 55%, p=0.011).

Conclusions: Early induction of hypothermia using intravenous ice-cold fluids was associated with better neurological outcome.

Title: Efficacy of Therapeutic Hypothermia for Out-of-hospital Cardiac Arrest in Patients with Non-ventricular Fibrillation: J-PULSE-Hypo Registry

Authors: Yoshio Tahara, Kazuo Kimura, Naoto Morimura, Ken Nagao, Naohiro Yonemoto, Hiroyuki Yokoyama, Hiroshi Nonogi

Abstract:

Background: Therapeutic hypothermia (TH) is effective for patients who remained comatose after resuscitation from out-of-hospital cardiac arrest (OHCA) due to ventricular fibrillation (VF). However, whether TH is effective for OHCA without VF remains unclear.

Methods: We conducted a multicenter retrospective study at 14 institutions to evaluate the effect of TH on OHCA from 2005 to 2009. Enrolled patients were divided into the VF group, pulseless electrical activity (PEA) group, and asystole group according to the initial rhythm, and neurologic outcomes at discharge from the hospital were compared. A favorable outcome was defined as a Cerebral Performance Category (CPC) of 1-2.

Results: A total of 452 patients were enrolled. The mean age was 59 ± 13 years. Men accounted for 83% of all patients. As compared with the asystole group (N=36), the PEA group (N=63) and the VF group (N=353) had higher rates of favorable outcomes (VF 63%; PEA 32%; asystole 19%, $p < 0.01$). In non-VF group, the interval from collapse to return of spontaneous circulation (22 ± 13 vs. 44 ± 23 min, $p < 0.01$) and the rate of return of spontaneous circulation before arrival at the hospital (74% vs. 26%, $p < 0.01$) differed significantly between patients who had favorable outcome (N=27) and those who did not (N=72).

Conclusions: Our results suggested that TH was effective not only for OHCA due to VF, but also for OHCA due to causes other VF, particularly short interval from collapse to return of spontaneous circulation.

Title: Efficacy of Therapeutic Hypothermia for Out-of-hospital Cardiac Arrest in Patients with Non-ventricular Fibrillation: J-PULSE-Hypo Registry vs. SOS-KANTO study

**Authors: Yoshio Tahara,** Kazuo Kimura, Naoto Morimura, Ken Nagao, Naohiro Yonemoto, Hiroyuki Yokoyama, Hiroshi Nonogi

Abstract:

Background: It is unclear that therapeutic hypothermia (TH) is effective for patients who remained comatose after resuscitation from out-of-hospital cardiac arrest (OHCA) without ventricular fibrillation (VF).

Methods: We compared favorable outcomes (CPC 1-2) at discharge from the hospital according to the initial rhythm between the patients who received TH in the J-PULSE-Hypo registry (N=452, 14 institutions, from 2005 to 2009) and the patients who received standard advanced life support without TH in the SOS-KANTO study (N=556, 58 institutions, from 2002 to 2003).

Results: The rate of favorable outcomes according to the initial rhythm (VF, PEA, Asystole) differed significantly between the two studies.

Conclusions: Although the times and background characteristics of the studies differed, our results suggested that TH was effective not only for OHCA with VF, but also for OHCA without VF.

Favorable Neurologic Recovery Rate
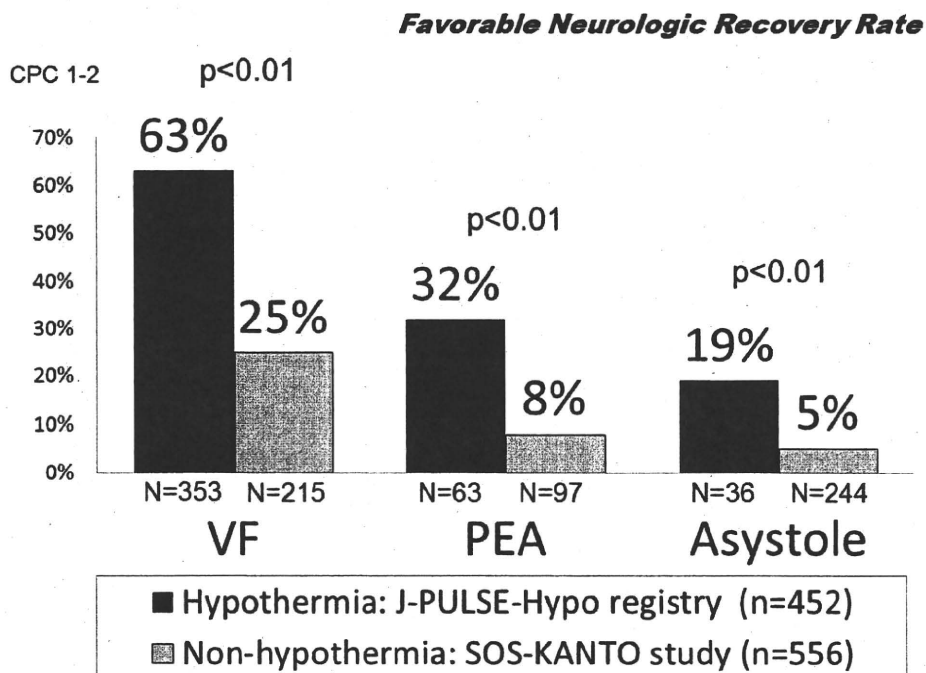
J-RCPR

抄録・スライド

The Impact of Individual Cardiovascular Disease on In-Hospital Cardiopulmonary Arrest (J-RCPR)

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Abstract:

Background: Some studies have shown almost one half of in-hospital cardiopulmonary arrest (IHCPA) patients are based on cardiovascular diseases. However, the detail of individual cardiovascular disease remains unknown. **Method:** A consecutive series of 491 adults with IHCPA were registered in Japanese registry of CPR for in-hospital cardiac arrest (J-RCPR). Among them, 222 patients (45%) were hospitalized for cardiovascular diseases; acute coronary syndrome (ACS, Group A, n=78), heart failure (HF, Group B, n=56), and arrhythmia (Group C, n=77). **Result:** Baseline characteristics IHCPA did not show significant difference in each group. Compared with other groups, Group B showed lower rate of ECG monitoring (Group A: 90%, Group B: 70%, Group C: 95%, p<0.001). Patients in Group A showed greater rate of IHCPA within 2 days of hospitalization (61% vs. 39% vs. 43%, p<0.05). The prevalence of first documented rhythm of IHCPA was not different in each group; however, the rate of return of spontaneous circulation (ROSC) was significantly higher in Group C (67%, 55%, 92%, p<0.001) and survival rate after 30days of IHCPA was significantly lower in Group B (41%, 27%, 52%, p<0.001). **Conclusion:** ACS patients showed higher rate of IHCPA within 2days of hospitalization. Interestingly, patients with HF showed poorer prognosis even though the prevalence of first documented rhythm was not different.

Cardiovascular and Non-cardiovascular Disease on the Prognosis of In-Hospital Cardiac Arrest (J-RCPR)

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Abstract:

Background: In-hospital cardiopulmonary arrest (IHCPA) is an important factor of death; however, the detail of underlying disease remains unknown.

Method: 491 consecutive patients were registered in Japanese registry of CPR for in-hospital cardiac arrest (J-RCPR). They were divided into two groups; definitive cardiovascular disease (Group C, n=265), and non-cardiovascular disease (Group N, n=226).

Result: The prevalence of Vf/VT as first documented rhythm was 38.5% (16.4%, p<0.0001), asystole was 20.8% (39.8%, p<0.0001) in Group C (Group N). The survival rate was significantly higher in Group C, even though the rate of return of spontaneous circulation (ROSC) was not different. The rate of favorable neurological function was also higher in Group C (82.4% vs. 45.9%, p<0.001).

Conclusion: Patients with cardiovascular disease showed better outcome in IHCPA compared to patients with non-cardiovascular disease.

	Cardiovascular disease (Group C)	Non-Cardiovascular disease (Group N)	p-value
N	265	226	
Witness of IHCPA	85.7%	66.4%	<0.0001
First documented rhythm at IHCPA			
Vf or VT	38.5%	16.4%	<0.0001
Asystole	20.8%	39.8%	<0.0001
IHCPA within 2days of hospitalization	46.0%	30.1%	<0.001
Place of IHCPA confirmed			
General Ward	41.1%	65.9%	<0.01
Intensive Care Unit	28.3%	18.1%	<0.0001
Outcome 30 days after IHCPA			
Death	63.4%	81.4%	<0.0001
Discharge	26.8%	18.1%	<0.0001
Favorable Neurological outcome (among pts survived at 30 days)	82.4%	45.9%	<0.001

Effect of CPR training on favorable neurologic outcome for in-hospital cardiac arrest from the Japanese Registry of CPR for In-hospital Cardiac Arrest (JRCPR)

Background:
Many training courses for CPR have been performed to medical personnel but few data have been reported those effect.

Method:
From 2008 to 2009, during 24 month, 491 patients were registered in the Japanese Registry of CPR for In-hospital Cardiac Arrest (JRCPR). In this study, 445 patients treated by the first responder received the CPR training (Group T n=357) and non-trained first responder (group n-T n=88) were analyzed.

We evaluated the ratio of return of spontaneous circulation (ROSC), 24 hours survival, survival discharge, good neurological function patients at discharge (CPC1 or 2 in Glasgow-Pittsburgh cerebral performance category) in each groups. We also analyzed each indexes initial rhythm VF/VT arrest (n=122) and PEA/Asystole (n=316).

Result:
The ratio of ROSC, 24hr survival, survival discharge and good neurological performance were 65.8%, 47.1%, 28.0%, 21.1% in group T, and 59.1%, 48.9%,28.4%, 10.3% in group n-T (In good CPC p<0.05). In VF/VT, the ratio were 80.2%, 70.3%, 50.5%, 45.5% in group T, and 74.2%, 64.5%,35.5%, 15.4% in group n-T (In good CPC p<0.05). In PEA/Asystole, the ratio were 60.8%, 38.5%,19.6%,12.6% in group T, 50.0%, 39.3%,23.2%, 5.9% in group n-T.

Conclusion:
In-hospital cardiac arrest treated by the first responder with the CPR training is significantly associated with higher rate of favorable neurologic outcome, especially in VF/VT.

演題名 :
Clinical Outcome from In-Hospital Cardiac Arrest During Nights and Weekends: Japanese
Registry of CPR for In-Hospital Cardiac Arrest(JRCPR)

抄録用図表の有無 : なし
抄録本文 :

<B>Purpose:</B> To examine whether outcomes after in-hospital cardiac arrest during
nights and weekends differ from those during days and weekends. <B>Method:</B> We
examined survival from cardiac arrest in hourly time segments, defining day the time as
from 8:00 to 15: 59, evening as from 16:00 to 23: 59, night as from 0:00 to 7:59, and
weekends as Saturday and Sunday, in 488 adult, consecutive in-hospital cardiac arrest
events in JRCPR obtained from 11 hospitals from January 1. 2008 though December 31, 2009.
<B>Results:</B> 203 cases of in-hospital cardiac arrest occurred during day (106 on
weekdays and 40 on weekends). 152 cases occurred during evening (106 on weekdays and 46
on weekends). 133 occurred during night (106 on weekdays and 27 on weekends). Rates of
return of spontaneous
circulation (ROS) during day were 79.1% on weekdays and 65.0% on weekends. Rates of ROS
during evening were 64.2% and 58.7%, respectively. Rates of ROS during night were 53.8%
and 37.0%, respectively. Survivals at 24 hours during day were 58.9% on weekdays and
50.0% on weekends. Survivals at 24 hours during evening were 47.2% and 47.8%, respectively.
Survivals at 24 hours during night were 45.2% and 26.0%, respectively.
<B>Conclusion:</B> Survival rates from in-hospital cardiac arrest are lower during nights
and weekends.

演題名 ：

Factors Related to Clinical Outcome in Patients with Ventricular tachycardia and fibrillation as Initial Arrest Rhythm in In-hospital Cardiopulmonary Arrest

抄録用図表の有無 ： なし
抄録本文 ：

(Backgroud)Better survival rate had been reported in case of ventricular tachycardia(VT) and ventricular fibrillation(VF) as initial arrest rhythm compared with other rhythms(PEA or Asystole) in in-inhospital cardiopulmonary arrest.It is still unknown about predictive factors related to clinical mortality in patients with VT and VF as initial arrest rhythm.

(Methods)In a prospective observational study from multicenter registry(JRCPR) from 2008 to 2009,24 month,total of 137 adults(≥20 years, age:66±15) with VT and VF were assessed.Survival data(ratio of Return of Spontaneous Circulation(ROSC), 24-hour survival ,survival to hospital discharge) and arrest variables were collected, including preexisting conditions and therapeutic interventions. To detect predictive factors related to
mortality, multivariate logistic regression analysis were performed. (Result) Of 137 patients , ratio of ROSC, 24-hour survival and survival to hospital discharge were 78.8%, 72.3% and 47.4%. After multivariate logistic regression analysis, advancing age ,events during night and epinephrine use were significantly associated with poor outcome of both ROSC and survival to hospital discharge .

(Conclusion)For cardiac arrest with VT and VF as initial rhythm, high age ,night event and epinephrine use appear to relate to poor outcome in in-hospital carioplumonary arrest.Further studies are needed to clarify the factors determining the prognosis of VT and VF in in-hospital carioplumonary arrest.

演題名 ：

The Impact of Therapeutic Hypothermia in the Treatment with Patients with out-of-Hospital Cardiacpulmonary arrest from J-Pulse-Hypo registry

抄録本文 ：

[Background] Mild hypothermia is an effective therapy for patients with return of spontaneous circulation after out-of-hospital cardiac arrest. However, the evidence of the efficacy of therapeutic hypothermia remains unclear. The purpose is to resolve clinical questions concerning therapeutic hypothermia by using multicenter registry database.

[Methods] We conducted a multicenter retrospective registry in Japan (J-Pulse-Hypo) from 14 institutions, to evaluate the effect of therapeutic hypothermia on out-of-hospital cardiac arrest, between January 2005 and December 2009.The committee entrusted each hospital with the timing of cooling, cooling methods, target temperature, duration, rewarming rate. Selection of cooling procedure was left to each institution.

[Results] In this study period, 452 patients (375 men) were enrolled into the registry. The age was 59±13 years. Initial ECG are VF/VT 78%, PEA 14%, asystole 8%. The median interval from collapse to return of spontaneous circulation was 25 (17-40) minutes. Mean temperature was 33.9+/-0.4 degrees C and mean cooling time was 32 hours.102 patients (22.6%) were treated with percutaneous cardiopulmonary assisted devices, used in case with hemodynamic compromised state. The rates of favorable outcomes,Cerebral Performance Category of 1-2, at 30 days after onset was 69%. The rates of favorable outcomes were 63% in VF group, 32% in PEA group and 19% in asystole group.

[Conclusions] We conducted a multicenter retrospective registry and showed clinical aspect of therapeutic hypothermia.