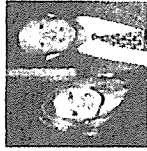
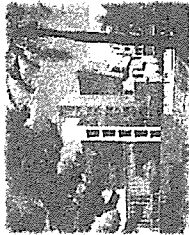


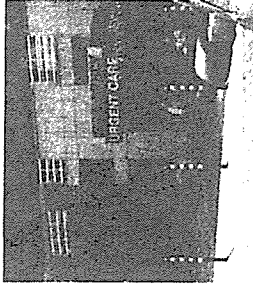
Sarver Heart Center

- 1986年にHeart Centerが設立
- 1998年にSarver Heart Centerとなる
- 2000年に現在のCenterが建設
- アリゾナ唯一の心臓移植施設



Emergency Room

- 北米型ER
- Tucson外傷センター
- Tucson Triageセンター
- 年間受診者数67000人
 - 毎年25%ずつ増加
- Triage Nurse
- EmergencyとUrgent
- 外傷30-40%(交通事故が80%)
- 30床(心疾患用は3床)



体制

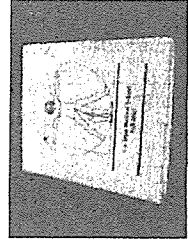
- スタッブドクター
 - Emergency Doctor 4人
 - Cardiologist 1人
 - Pediatrician 1人
 - Gynecologist 1人
 - Neurologist 2人
- レジデント 6人

各勤務帯に15名の医師が常駐
完全交代制



Dispatch

- Dispatch ManualによりTriage Nurseが行う。
 - 救急車からの情報を元に行う
 - 主訴により電話で行う問診と処置がプロトコル化
 - 得られる情報により更にTriage



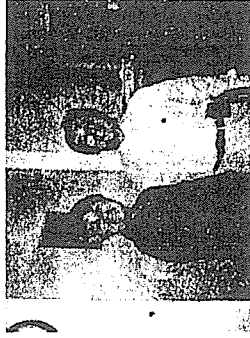
Triage

- Green (First Contactはレジデントのみで可)
 - 意識障害なし、Vital安定
- White (First Contactはレジデントのみでは不可)
 - 現在意識障害なし、単純外傷、Vital安定
 - 一過性意識障害有り
- Red (First Contactはスタッフドクター)
 - 意識障害あり、Vital不安定、多発外傷



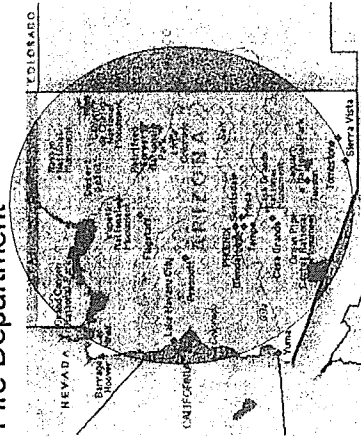
院外心停止のデータ解析

- ウツタイン様式
 - 世界共通フォーマット
- 蘇生の質の評価
- 蘇生の質の保証



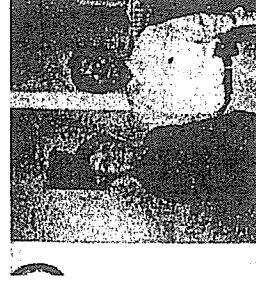
データ収集範囲


- Tucson Fire Department



データの信頼性


- Lani Clark
 - データベース作成
 - データ検証
 - フォローアップ
- ADHS BEMSとして活動





ADHS BEMS
Arizona Department of Health Services
Bureau of Emergency Medical Services
S.H.A.R.E. Program

<http://www.azshare.gov/>



SHARE
Share Health in Arizona
Rescue and Education

MISSION: Our mission is to ensure that every citizen has the best access to care in the world for the cost of Hospital, at this time.

BACKGROUND: The state has many hospitals, but only one private. Governmental hospitals are not always the best. We are looking for ways to improve the quality of care for our citizens. We are looking for ways to improve the quality of care for our citizens. We are looking for ways to improve the quality of care for our citizens.

OUR GOALS: We are looking for ways to improve the quality of care for our citizens. We are looking for ways to improve the quality of care for our citizens. We are looking for ways to improve the quality of care for our citizens.

S.H.A.R.E Program

- 院外心停止の登録システム
 - アリゾナ州Health Serviceが支援
 - 報告書様式の提供
- AEDデータの解析支援
- AEDのデータ登録
- AED処方箋の援助
- AEDの使用法を含めた心肺蘇生法教育の援助
- AED使用・心肺蘇生法の質の保証

Acute Stroke Documentation Aid

Acute Stroke Documentation Aid

A major goal of the SHARE & ASPIRE Programs is to identify areas of excellence and areas of limitation in our provision of medical care to the citizens of Arizona. We cannot know the quality of what we are doing if we don't document thoroughly, learn from and use the information provided. Anecdotes are interesting and a pleasure to hear, but they don't lead to large scale beneficial revisions.

Most of the following patient/incident information is currently included in providers' documentation (Standard), so all standard requirements are not included here. You know them already. The additional cases listed is not currently being widely documented (E-variant) but should be for all patients suspected of and assessed for possible stroke.

- ✓ Patient Name, Gender, Age (S) — take care with spelling a patient's name.
- ✓ Patient date of birth, necessary for outcome and follow up purposes (E)
- ✓ Ethnicity is valuable data for certain issues and should be included if your agency allows. (E)
- ✓ Patient complaints — including headache/syncope/weakness/weakness/weakness/complaints (S & E)
- ✓ Medical history/medications — including previous CVA with approximate date, major surgery within previous 2 weeks, TIA, bleeding problems, recent hospitalizations, etc. (S & E)
- ✓ History of seizures or epilepsy? (S) — Seizure witnessed with this incident? (S)

Out of Hospital Cardiac Arrest Document Aid

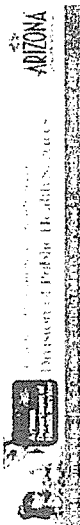
Out-of-Hospital Cardiac Arrest Documentation Aid

One of the major goals of the SHARE Program is to identify areas of excellence and areas of limitation in our provision of medical care to the citizens of Arizona. We cannot know the quality of what we are doing if we don't document thoroughly, learn from and use the information provided. Anecdotes are interesting and a pleasure to hear, but they don't lead to large scale beneficial revisions.

Most of the following patient/incident information is included in providers' OHCA documentation (Standard), so all standard requirements are not included here. You know them already. The additional information listed is not currently being widely documented (E-variant) but should be wherever possible.

- ✓ Patient Name, Gender, Age (S) — take care with spelling a patient's name, pediatric arrests - age documented in months if under 2 years.
- ✓ Patient date of birth, when available, for follow up purposes (E)
- ✓ If patient is less than 10 years old, estimated weight (E)
- ✓ Ethnicity is valuable data for certain issues, i.e. cause of arrest, bystander CPR, survival, and should be included if your agency allows. (E)
- ✓ Medical history and patient complaints — immediate and over previous 2 weeks (S)
- ✓ Estimated time of collapse, if witnessed (S)

登録書式の提供



ARIZONA
DEPARTMENT OF HEALTH SERVICES

Arizona Department of Health Services
Cardiac Arrest Registry Form

In the event of a cardiac arrest, the Arizona Department of Health Services (ADHS) will provide you with a Cardiac Arrest Registry Form to complete. This form is used to collect information about the cardiac arrest and the resuscitation efforts. The form is used to track the outcomes of cardiac arrests and to identify areas for improvement. The form is also used to provide feedback to the medical community.

ADHS
Arizona Department of Health Services
1111 North Central Avenue, Phoenix, AZ 85004
Phone: (602) 968-2000
Fax: (602) 968-2001
www.azdhs.gov

院外心停止

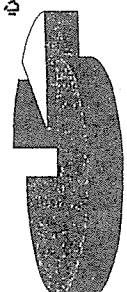
- 心原生院外心停止
 - 生存率
 - Tucson 6%
 - Chicago 1%
- 目撃のある心室細動
 - 生存率
 - Tucson 10%
 - Los Angeles 6%
 - Rock and Walworth counties 15%

Bystander CPRの問題点

- Quantity (量)
- Quality (質)

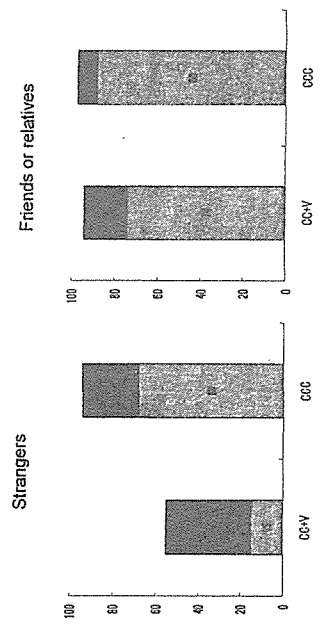
Bystander CPR

- Tucson
 - 40%
 - それから医療関係者をのぞくと 20%
 - 日本では
 - 心でのみ 9.8%
 - 心臓マッサージ+人工呼吸 13.9%



NO CPR 76.3%
T. Iwami and J-PULSE investigators AHA, ReSS, Dallas, 2005

Percentage of respondents
"definitely" or "probably" willing to perform CPR



Bystander CPRを増やすには

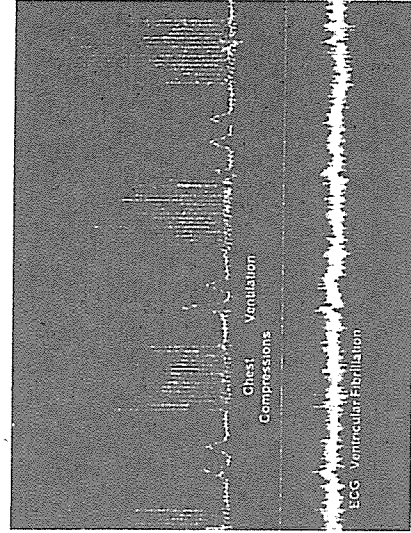
- 人工呼吸への抵抗
- 口対口呼吸
- 感染



CPRの質の評価

- ウツタイン様式による報告書
- AED記録
 - 心電図
 - 音声
- 無線記録

Standard CPR



Quality of Cardiopulmonary Resuscitation During In-Hospital Cardiac Arrest

Table 2. CPR Performance During In-Hospital Cardiac Arrest
 First 5 Minutes of CPR
 Entire Episode of CPR
 N = 467

Measure	First 5 Minutes of CPR	Entire Episode of CPR
Mean \dot{V}_T (L/min)	42 (24)	46 (25)
Mean \dot{V}_E (L/min)	37 (20)	38 (21)
Compression D = 1264	69 (55)	64 (52)
Compressions/min	120 (70)	107 (58)
Depth (cm)	35 (13)	34 (9)
Depth episodes/min	27 (30)	22 (23)
Time spent in 100% O ₂	0 (0.5)	0 (0.5)
Time spent in 30-100% O ₂	39 (37)	62 (33)
Time spent in 0-30% O ₂	405 (11)	633 (9)
Time spent in 0% O ₂	41 (5)	42 (6)
Ventilation D = 183	5 (4.5)	11 (6.7)
Ventilations/min	10 (7)	11 (7)

APACHE II score was 15.5 (range 0-29). Mean age was 65 years, with 60% male. The study was conducted in a tertiary care hospital. The study was approved by the Institutional Review Board. All data were analyzed using the chi-square test. P < .05 was considered statistically significant.

JAMA 2005;293:305-310



Quality of Cardiopulmonary Resuscitation During Out-of-Hospital Cardiac Arrest

JAMA 2005;293:299-304

Table 3. Performance of CPR During the First 5 Minutes and Entire Episode of CPR

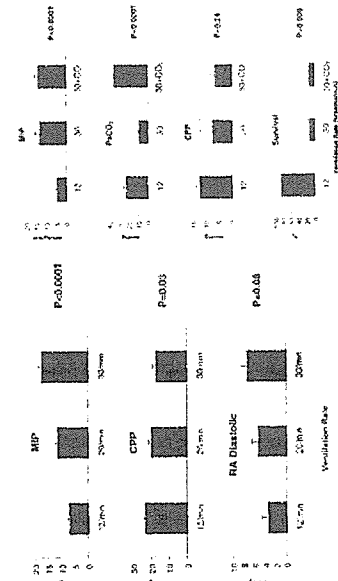
Measure	First 5 Minutes of CPR	Entire Episode of CPR
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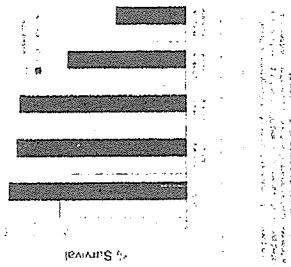
Hyperventilation-Induced Hypotension During Cardiopulmonary Resuscitation

Chen F, Vandegriff MD, Gander S, Sanderson MD, Bostock D, Bragazzi ND, Miron D, Hagan J, Vandenbroucke P, et al. Hypertension during cardiopulmonary resuscitation. *Circulation* 2004;109:1860-1865



Inspiratory Impedance Threshold Device (ITD)

- 胸腔内を陰圧を増大
- 静脈灌流を増大
- 生存退院率を改善

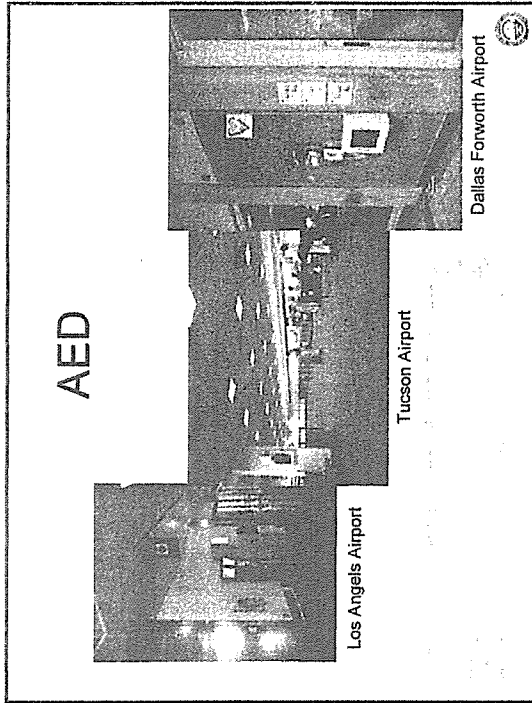


Circulation 2003;108:2201.



蘇生の質の問題

- 心臓マッサージ
 - 早さ
 - 深さ(浅すぎる)
 - 中断時間が長い
 - (人工呼吸や脈拍確認が長すぎる)
- 人工呼吸
 - 早さ(早すぎる→胸腔内圧上昇)
 - 時間がかかりすぎる
 - (テクニク(口対口、BVM))
- AED



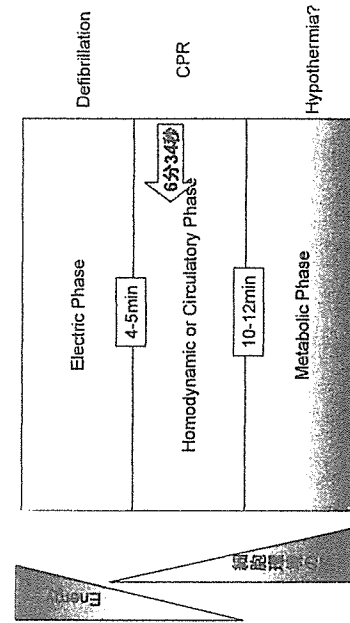
Shock First of CPR First

- 平均到着時間 6分34秒
- 60例中20例がVF
- 20例中初回のショックで
 - VF停止 17例
 - Perusing rhythm 0例
 - PEA or Asytole 17例
 - VF持続 3例

Data from TFD 2002



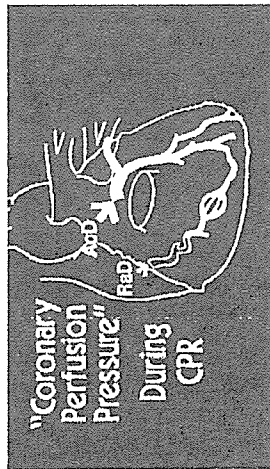
Cardiac Arrestの経過は3つのPhaseに分けられる



Weisfeldt ML, Becker LB. J AM Med Assoc 2002; 288:3035-8

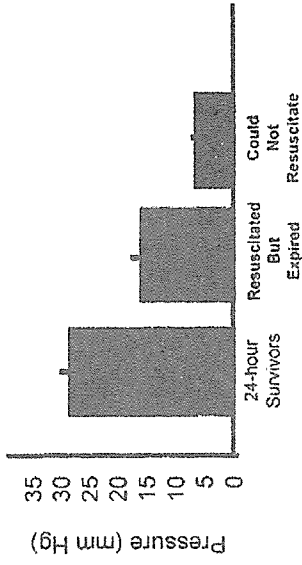


冠灌流压 (CPP)

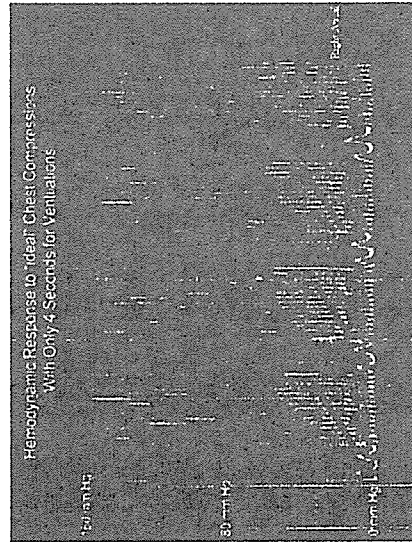


CPPと心拍再開率

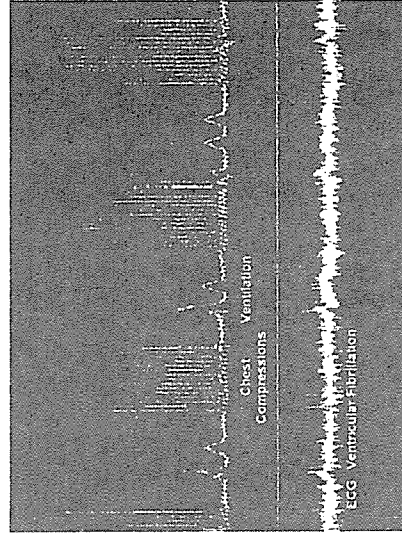
Survival From Prolonged Cardiac Arrest Relates to the Coronary Perfusion Pressures Generated During Chest Compression



CC:Ventilation ratio=15:2



Standard CPR



心肺蘇生法の改良

- 心臓マッサージをより強調
- 心臓マッサージの中断時間を最小限に
 - 脈拍の確認を省略
 - 呼吸回数数を減らす

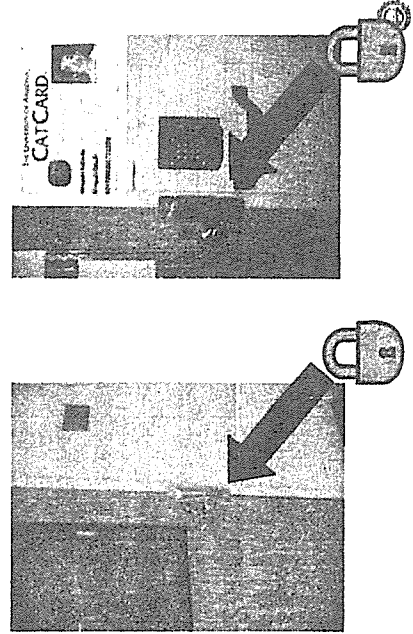
**Continuous
Chest
Compression
CPR**



Animal Labo



Animal Labo



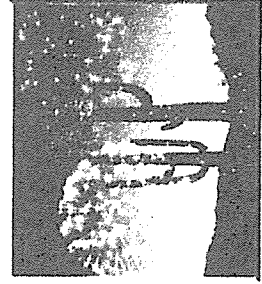
University Animal Care (UAC)

University Animal Care

QUALITY CARE FOR RESEARCH ANIMALS

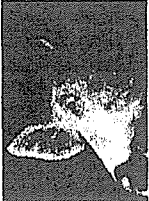
<http://www.ahsc.arizona.edu/uac/>

10/ Annual Facility
Annual Report
For more information, visit our
website at www.ahsc.arizona.edu/uac/
or call our toll-free
24-hour hotline at 1-800-451-4629
or email us at uac@ahsc.arizona.edu
or visit our website at www.ahsc.arizona.edu/uac/



Animal Labo

- Laws & Regulation
- Zoonotic Diseases of Laboratory Rodents
- Introduction to the Animal Hazards Program
- Handling, Restraint, and Techniques of Laboratory Rodents
- Swine Module
- Surgery & Anesthesia



Laws and Regulation

IACUC Certification - Laws and Regulations (Version 2005A)

Table of Contents

1. Laws & Regulations

2. Zoonotic Diseases of Laboratory Rodents

3. Introduction to the Animal Hazards Program

4. Handling, Restraint, and Techniques of Laboratory Rodents

5. Swine Module

6. Surgery & Anesthesia

Laws & Regulation

Laws & Regulations (Version 2005A) **Be sure to answer all questions!**

In order to become certified all personal information at the beginning of this quiz must be filled out completely. You may skip questions. The notes may be found in the Student Study Manual for Form and Methods.

Name (Last & First): _____

Department: Other _____ IACUC _____

Investigator's Name (Last & First): _____

Working Title: _____ Employee or Student ID #: _____

Unit address: _____

Sign up for the Student Study Manual for Form and Methods: Yes No

Confirm I earned my email/Email address is updated for this: Yes No

1. True False The IACUC must have at least one member who is a scientist.
2. True False Every scientist, engineer or faculty member who uses the institution's animals must receive training according to the institution's policies.
3. True False Institutional animals used for the purpose of research must be registered with the IACUC.
4. True False The IACUC must have at least one member who is a scientist.
5. True False The IACUC must have at least one member who is a scientist.
6. True False A teaching assistant at a laboratory who is not a scientist must receive training according to the institution's policies.
7. True False A teaching assistant at a laboratory who is not a scientist must receive training according to the institution's policies.
8. True False A teaching assistant at a laboratory who is not a scientist must receive training according to the institution's policies.

IACUC Certification Class

ORDER 2005 IACUC Certification Class Registration Form

In order to receive a paper for class all personal information at the beginning of this form must be filled out completely.

Name (Last & First): _____

Department: Other _____ IACUC _____

Investigator's Name (Last & First): _____

Working Title: _____ Employee or Student ID #: _____

Unit address: _____

Check all classes you wish to attend: Laws & Regulations Zoonotic Diseases of Laboratory Rodents Introduction to the Animal Hazards Program Handling, Restraint, and Techniques of Laboratory Rodents Swine Module Surgery & Anesthesia

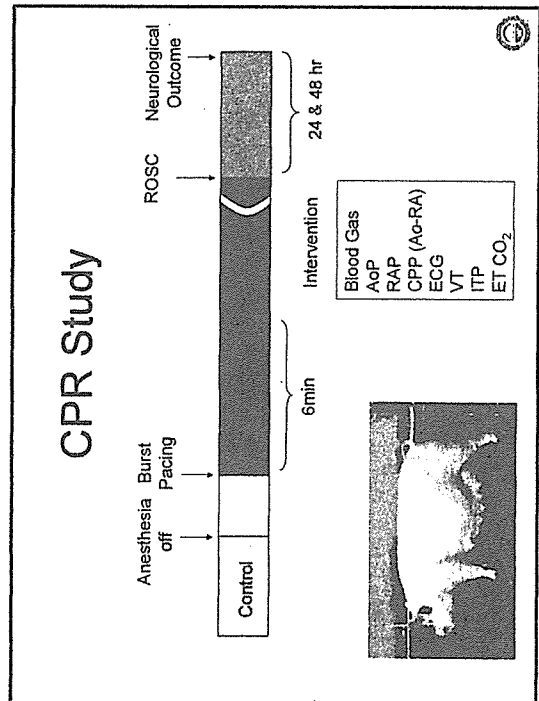
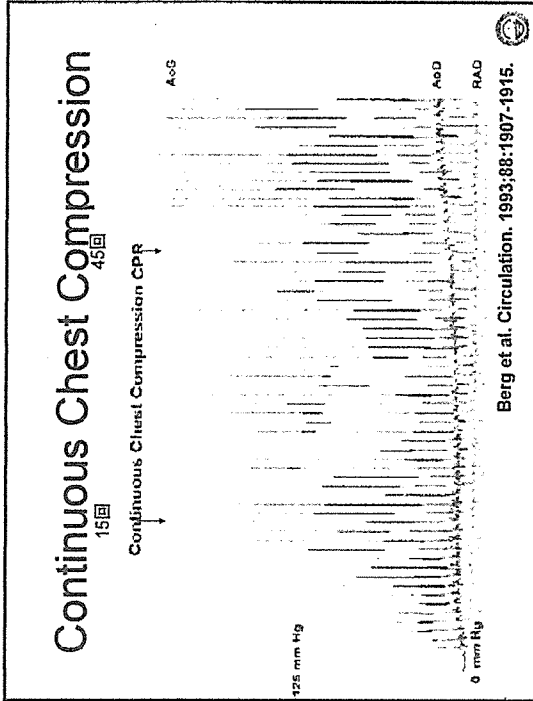
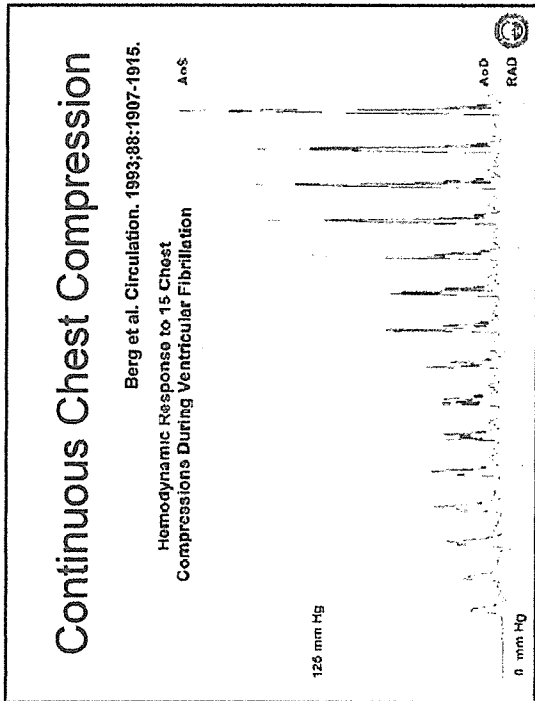
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Check all classes you wish to attend: Laws & Regulations Zoonotic Diseases of Laboratory Rodents Introduction to the Animal Hazards Program Handling, Restraint, and Techniques of Laboratory Rodents Swine Module Surgery & Anesthesia

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Check all classes you wish to attend: Laws & Regulations Zoonotic Diseases of Laboratory Rodents Introduction to the Animal Hazards Program Handling, Restraint, and Techniques of Laboratory Rodents Swine Module Surgery & Anesthesia



- ## CPR Study
- Old CPR Model
 - Chest Compression : Ventilation = 15:2
 - Continuous Chest Compression Model
 - Insufficient Ventilation
 - Hyperventilation Model
 - 35/min, 15ml/kg, Manual BVM ventilation
 - ACS model
 - LAD Plugging
 - Hypothermia
 - MRI
 - MMP, NOS, TNF- α etc.

ABC vs. CCC

	pH	pO ₂	pCO ₂	CPP
Baseline				
ABC	7.43	71	42	56
CCC	7.45	72	39	56
5min				
ABC	7.55	87	26	18
CCC	7.46	58	36	19

Kern et al. Circulation. 2002;105:645-649



ABC vs. CCC

24時間後の
心拍再開率 神経学的予後
"good" 24時間後の
神経学的予後
"normal"

ABC	6/15	3/15	2/15
CCC	13/15	12/15	12/15

Kern et al. Circulation. 2002;105:645-649



Stone Heart

Magnetic Resonance Imaging During Intracranial Ventricular
Fibrillation Reveals Primal Right Ventricular
Overdistention Without Left Ventricular Volume Loss

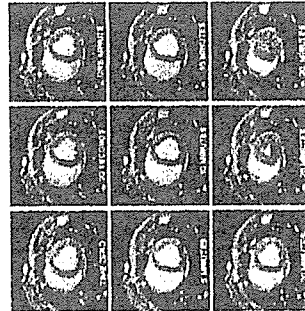
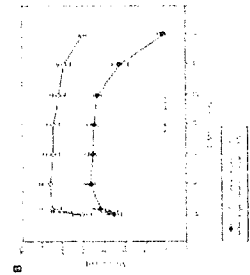


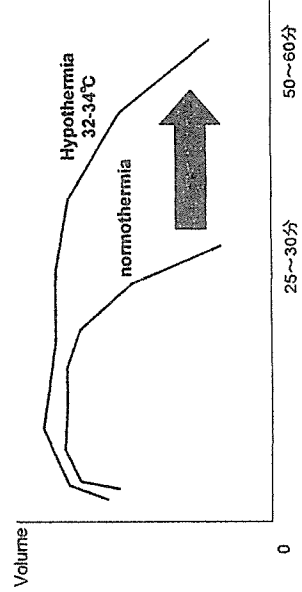
Figure 3. Shows the values of RV and LV from the same patient. Each slice is 1.25 mm. During 30 minutes of fibrillation of the RV, the RV was enlarged and the LV was compressed. The time of fibrillation was 30 minutes. The time of fibrillation was 30 minutes. The time of fibrillation was 30 minutes.

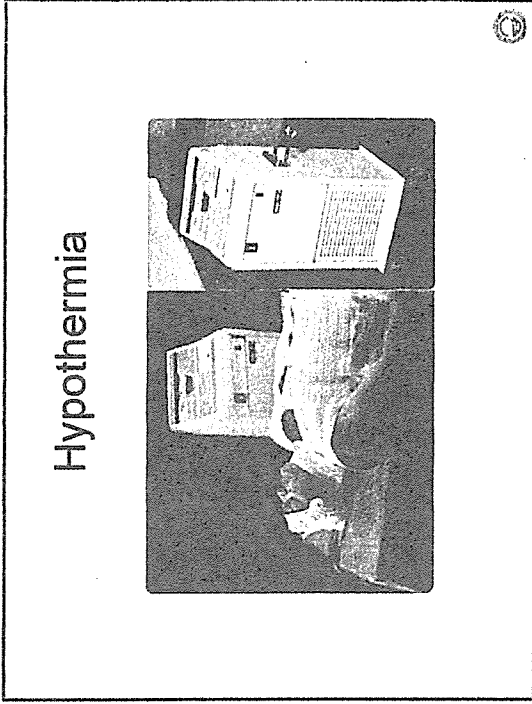
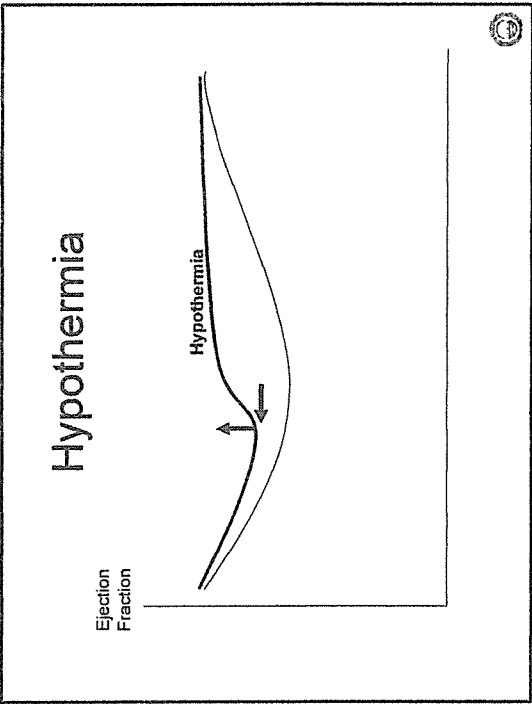
Circulation 2005;111:1136-1140



Hypothermia

• Stone Heartの抑制効果





Hypothermia Post Cardiac Arrest

ICE Packs and Cooling Blankets Artic Sun Hypothermia Device

UMC UMC

Red Book

Principles of
Cardiocerebral Resuscitation (CCR)
For out-of-hospital Cardiac Arrest

Second Edition
September, 2005

一般市民向け講座 UA Mini-Medical Lecture

Our Schedule FALL 2005

Oct. 5 Communicating With Your Physicians
in the Primary Care Medicine
Program in Internal Medicine

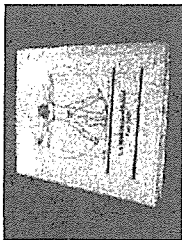
- 大学講義室
- スタッフドクターが行う
- 6週間
- 一般市民を対象 (30-50名)
- 約1-2時間
- コーヒー、ビスケツト付き

Oct. 12 Sudden Cardiac Arrest & New CPR
Peter Oh, MD
Saver Heart Center
Baltimore, MD, Ph.D. DVM
Saver Heart Center

Oct. 19 Ask the Doctor About Lymphoma
John Swanson, MD
Arnold Cancer Center

Oct. 26 Parkinson's Disease and Current Treatment
Scott Sherman, MD
Neurology

Nov. 2 Stroke and Stroke Prevention
Joseph Wilb, MD, FAHA
Chief, Section of Vascular Surgery



病院におけるCPR教育

- 地域トレーニングセンター
 - UMC, TMC
- 専用スペース
- AHA Official Course
- 集中治療室Nurseは必須
- 医師は卒業時に必須
- 救命士も必須



認定書

TMC HealthCare

TMCの認定書



AHAのProvider Card

アリゾナ大学の役割

- 臨床
- 研究
 - 疫学研究
 - 動物実験
 - 臨床研究
- 教育
- 州政府との協力体制の確立

J-PULSE 海外発信

3. AHA、国際会議

当該研究における海外出張の意義

米国心臓協会 (American Heart Association、AHA) 学術集会への参画と意見交換会議について

国立循環器病センター 緊急部 野々木 宏

平成18年7月24日

1. AHA について

米国心臓協会 (AHA) は毎年学術集会を開催し、世界からの参加が最大規模の循環器系の学会である。参加者は3-4万人で、本学会での演題採択は国際的に認められるため各国の循環器医の目標となっている。また、数多くの診療ガイドラインを作成し、また一般人への啓発活動や行政への提言行い、NIHと連携して循環器疾患の撲滅に向けて精力的な活動をしている団体である。日本循環器学会は、AHAと意見交換をできるようにお互いの学術集会で共同セッションをつくり協力を続けている。

2. AHA における蘇生の科学と心肺蘇生法について

心肺蘇生法の普及による院外心停止の救命は米国の国家的戦略であり、AHAは行政と共に1970年代から心肺蘇生法に関するガイドラインを作成し、その普及につとめてきた。我が国の心肺蘇生法の指針にも大きな影響を与えてきた。ガイドラインは6年ごとに改訂され、2000年には国際蘇生法連絡委員会 (International Liaison Committee on Resuscitation: ILCOR) とともに国際ガイドラインとして世界の標準的なガイドラインが提唱された。2005年に ILCOR の新しい勧告に基づき AHA ガイドラインが改訂された。また、心肺蘇生法の普及のため、AHAはトレーニングに関する教材や教育方法をつくり、我が国においても2003年にAHAの指導の元に、国際トレーニング組織 (ITO) が設立され、国立循環器病センターをはじめとする施設でトレーニングが可能となり普及活動が精力的に実施され、毎年 AHA との意見交換を行っている。

3. 当該研究班との関連

以上のように、AHAは循環器疾患の基礎的・臨床的な学術活動と共に、心肺蘇生法のエビデンス発信・トレーニングについて世界をリードする組織である。

当該の厚生労働科学研究班 (主任研究者: 野々木 宏) は、心原性院外心停止の実態とその対策のため心肺蘇生法と自動体外式除細動器 (AED) の普及をはかり、その評価のため大規模登録システムを構築するものである。我が国からの国際発信を行うため J-PULSE と研究組織名をつけ、AHAを中心として毎年蘇生に関わる専門医との意見交換の会議と学術集会 (AHAでの Resuscitation Science Symposium、ReSS) での国際的なエビデンス発信を続けてきた。ReSSはAHAとNHLBI (米国国立衛生研究所 NIHの循環器疾患担当部門) の主催で開催されている。

昨年度の成果

1)厚生労働科学研究(J-PULSE、主任研究者野々木宏)から ReSS に4演題が採択され、各国の専門医と意見交換を行った。特に、大規模ウツタインレジストリーが評価され、心肺蘇生法のうち特に心臓マッサージのみでの有効性を示したことが注目を浴びた。また我が国で開発されたⅢ群抗不整脈である Nifekalant の有効性を示し、今後の静注性アミオダロンとの比較が期待されるとの評価を得た。

(1) Prevention of Life-threatening Ventricular Tachyarrhythmia by a Novel and Pure Class III Agent, Nifekalant hydrochloride: Potential Alternative to Amiodarone

(2) Chest Compression-only Cardiopulmonary Resuscitation on Ventricular Fibrillation as initial rhythm in Patients with Out-of-Hospital Cardiac Arrest; A large-scale population-based cohort study in Osaka, Japan

(3) Outcome of Out-of-Hospital Cardiac Arrest in a Large Metropolitan Area in Japan: A 6-year Emergency Medical Services Perspective

(4) The Effect of Bystander Initiated Chest Compression-Only CPR on Cardiac Arrest of Non-Cardiac Etiology

2)AHAのECC(Emergency Cardiovascular Care 循環器救急医療担当部)担当者との意見交換:2005年11月末に心肺蘇生法に関する国際ガイドラインの改訂があり、今後の我が国における心肺蘇生法の推進方法について意見交換を行った。AHA(副社長 Bell 氏,マネージャー責任者 Mullins 氏, アジア太平洋地域部長 Luo 氏、国際トレーニング責任者 Hagg 女史、科学部の Pott 博士、Nadkarni 教授、アジア・太平洋顧問 Ricurte 氏)と国際的に標準化されたAHAガイドラインの適用方法やガイダンスについて意見交換を行った。J-PULSEにおける普及対策や過去2年間におけるAHA認定コースの普及活動が評価された。

3)多施設共同研究の推進に関する会議:臨床試験の推進について Duke クリニカルセンタ Alexander 博士、Krukoff 教授との意見交換を行った。国際的に同時開発すべき医薬品に関する臨床試験推進について意見交換を行い、今後の我が国での推進会議について検討を行った。更に、我が国の独自の抗不整脈薬として nifekalant があり、我が国で得られたデータを基に、今後、国際的なエビデンス発信するために必要な試験プロトコルについて意見交換を行った。具体的には、J-PULSE 試験において我が国での実態調査のため前向きレジストリーを行い、そのデータに基づき無作為比較試験を行う場合に必要な事柄を検討した。

4)シアトル市の救命対策に関する意見交換:救命率の最も高いシアトル市において、ワシントン大学 Nichol 助教授、HaborView Medical Center の Copass 先生、Cobb 先生からシアトル救命救急システムについて意見交換を行い、J-PULSE でのウツタイ登録データについて教唆をいただいた。Harborview Emergency Department と MedicOne における Dispatch Center の見学を行った。

循環器救急医療に関する国際的な専門家あるいは組織との意見交換を達成し、我が国からのエビデンス発信をし得たことは、今後の厚生科学研究推進に役立つものと考えられる。更に国際的に通用するエビデンス作成について意見交換をし、Duke 大学、Alizona 大学、Washington 大学、AHA-ECC 等の連携を構築できたことは今後の臨床研究を遂行する上で意義深いものであった。

さらには、国際的に通用するガイドライン作成の過程で多くの研究者と意見交換し、連携の源を構築できたことは、我が国からのエビデンス発信、国際共同試験、科学的根拠に基づいたガイドライン作成に多大な貢献が期待され、厚生労働科学研究の推進に意義の深いものであると思われる。

4. 本年度における意義

最新の循環器病学を目的とした米国心臓協会において、急性心不全とその関連疾患に対するより効果的かつ効率的な治療に関する情報収集および心肺蘇生法教育およびガイドライン改訂について意見交換を行い、当該研究の3年間の成果を発表することは我が国からのエビデンス発信の機会をつくる意義が大きいと考えられる。当該研究の大規模レジストリーは国際的にも最大規模であり、海外において注目されている研究であり、シンポジウムでの発表と会議は当該研究の推進で大きな意義があるものである。

本年度は、John H. Alexander 医師(デューク大学)、Robert A. Berg 医師(アリゾナ大学)らと当該研究の院外心停止に関する臨床研究登録などに関する情報収集や新しい心肺蘇生法に関する意見交換を行うことにより、当該研究の発展に寄与する。最新の循環器病学を目的とした米国心臓協会において、急性心不全とその関連疾患に対するより効果的かつ効率的な治療に関する情報収集および心肺蘇生法教育およびガイドライン改訂について意見交換を行う。また、当該研究の治療法情報を収集し解析することにより、当該研究の発展に寄与するものである。

**Outcomes of Out-of-Hospital Cardiac Arrest in Osaka, Japan:
A 5-year Emergency Medical Services Perspective in a Large Metropolitan Area**

J-PULSE investigators
Japanese Population-based Utstein-style study with defibrillation and basic / advanced Life Support Education

Introduction

- In Japan, death due to cardiac cause is the second leading cause of adults' death and being increased, and out-of-hospital cardiac arrest has become one of a major concern of communities as in Western countries.
- Although advances in the understanding of cardiac arrest and resuscitation have provided opportunities to strengthen the links in the chain of survival, survival of out-of-hospital cardiac arrests has remained poor.
- Little is known about temporal trends in survival and prognostic characteristics of patients with out-of-hospital cardiac arrest especially in a metropolitan area.

Objectives

To evaluate the temporal trend of outcome and prognostic factors of out-of-hospital cardiac arrests based on a large scale, population-based Utstein style study

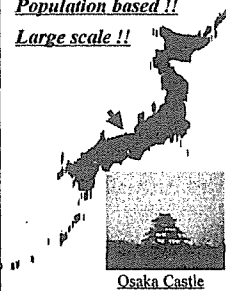
Methods

- We evaluated a population-based cohort of emergency medical service (EMS)-treated adult patients (age ≥ 18) with out-of-hospital cardiac arrest of cardiac etiology (n=13,933) from 1998/5 to 2004/3 by means of the Utstein style.
- We analyzed data from 5 years in this presentation although the abstract consisted of data from 6 years, because we could not finish the follow-up survey for neurological function of one-year survivors of the last year.
- Time was grouped into an initial 11-month period and 4 successive one-year periods.

Study period: from May 1st, 1998 to March 30th, 2003

Study area: Osaka Prefecture, Japan

Population based !!
Large scale !!



Population: 8.8 million
Area: 1894 km²
Includes 35 fire stations

Emergency medical service (EMS) system

- Activated by dialing 119 / Three-person unit
- EMS personnel were only allowed to insert an intravenous line or an adjunct airway and use a semi-automated external defibrillator for arrest patients after receiving on-line medical direction in this period.
- Public access defibrillation program was not promoted during this periods.

Data collection

- The data sheet was designed for this project by using the Utstein style and data were prospectively collected.

