Cardiac Arrest during Long-Distance Running Races
Outline

- Introduction
- Background
- Methods
- Results
- Conclusions
- Discussion
- Advice
Introduction

- Cardiac arrest sometimes occurs during games or races of various sports. (e.g. marathon, soccer)

- This article was picked up from The New England Journal of Medicine.
In the United States, about 2 million participants in long-distance running races per year.

Concern about the safety of this activity because of reports of race-related cardiac arrests.
Methods

- In the United States.
- Assessing the incidence and outcomes of cardiac arrest associated with marathon and half-marathon races.
- Determining the clinical characteristics of the arrests by the following ways.
  - Interviewing survivors and close relatives of nonsurvivors.
  - Reviewing medical records.
  - Analyzing postmortem data.
Results

- 59 of 10.9 million runners had cardiac arrest.

- Cardiovascular disease accounted for the majority of cardiac arrests.
Results

- The incidence rate:
  - Marathons > Half-marathons
  - Men > Women

- Male marathon runners had an increased incidence of cardiac arrest during the latter half of the study decade.
Results

The cardiac arrest occurred most:
- 31.5 km - finish (marathon).
- 15.8 km - finish (half-marathon).
To account for differences in race distance between the marathon (42.2 km) and half-marathon (21.1 km), the point in the race course where the cardiac arrest occurred was examined as a function of the total race-distance quartile.
Results

• 42 of the 59 cases were fatal.

• The strongest predictors of survival (among the 31 cases with complete clinical data):
  • Initiation of bystander-administered CPR.
  • An underlying diagnosis other than hypertrophic cardiomyopathy.
Conclusions

- A low overall risk of cardiac arrest and sudden death.
- Hypertrophic cardiomyopathy or atherosclerotic coronary disease.
- Primarily among male marathon participants.
Discussion

- Unable to obtain complete clinical data.
- Examined the incidence of cardiac arrest as a function only of race distance and sex.

Further work is needed.
Advice

- People with cardiovascular disease should be careful.

- Early bystander-administered CPR and use of AED at the scene of the arrest are important.
Thank you for listening!
Any questions?