Clinical Audit

A non-randomized clinical study on heat stroke

Rajkumar*

CCT - Emergency Medicine, Kauvery Hospital, Trichy
*Correspondence

1. Background

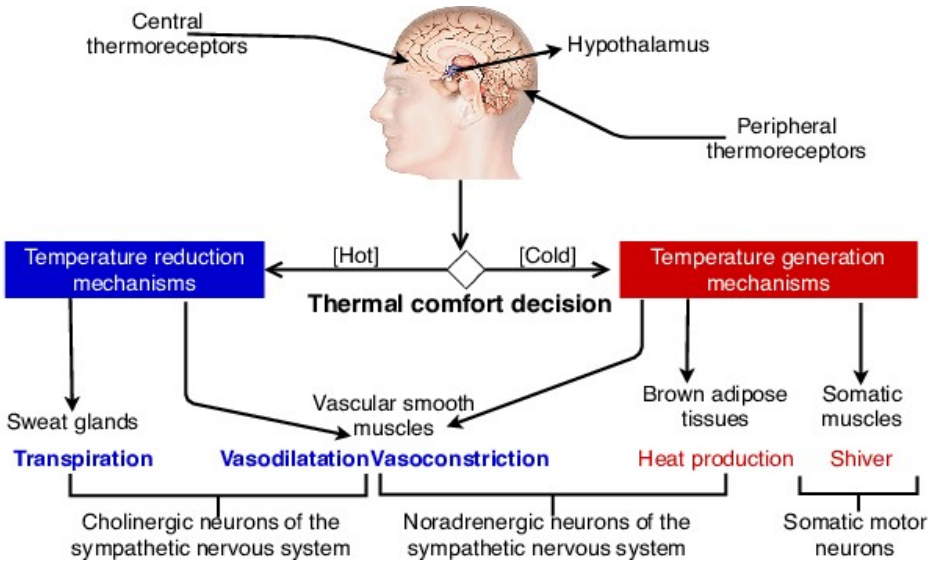
Heat stroke is a life threatening condition, characterized by increase in core body temperature >40c along with central nervous system manifestation.

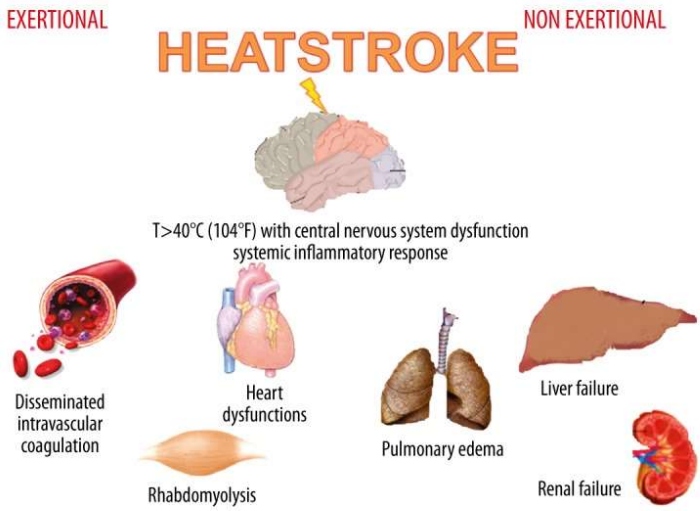
Feature*	Classic Heatstroke	Exertional Heatstroke
Age group	Prepubertal, elderly	Postpubertal and active
Occurrence	Epidemic (heat waves)	Sporadic (any time of year)
Concurrent activity	Sedentary	Strenuous
Health status	Chronically ill	Generally healthy
Medications	Often being used (prescribed medications)	Usually none being used (sometimes ergogenic aids, illicit drugs)
Mechanism	Absorption of environmental heat and poor heat dissipation	Excessive heat production, which overwhelms heat-loss mechanisms
Sweating	May be absent (dry skin)	Usually present (wet skin)
CNS dysfunction	Common	Common
Acid–base disturbance	Respiratory alkalosis	Metabolic acidosis
Rhabdomyolysis	Unusual	Frequent
Liver dysfunction	Mild	Marked to severe
Renal failure	Uncommon (<5%)	Common (25–30%)
DIC	Mild	Marked to severe
ARDS	Common	Common
Creatine kinase	Mildly elevated	Markedly elevated
Calcium	Normal	Low (hypocalcemia)
Potassium	Normal	Usually high (hyperkalemia)

Citation: Rajkumar. A non-randomized clinical study on heat stroke. Kauverian Med J., 2024;2(3):11-17.

Academic Editor: Dr. Venkita S. Suresh

ISSN: 2584-1572 (Online)



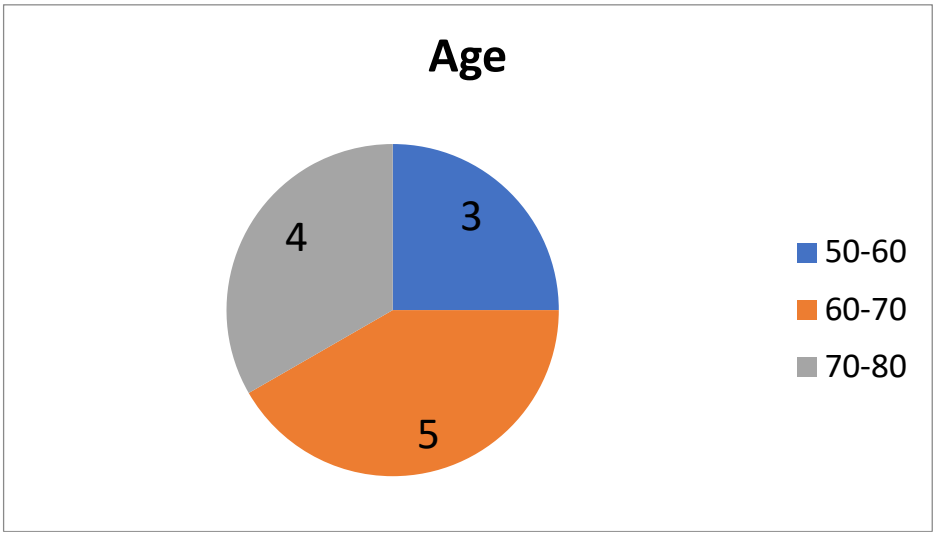


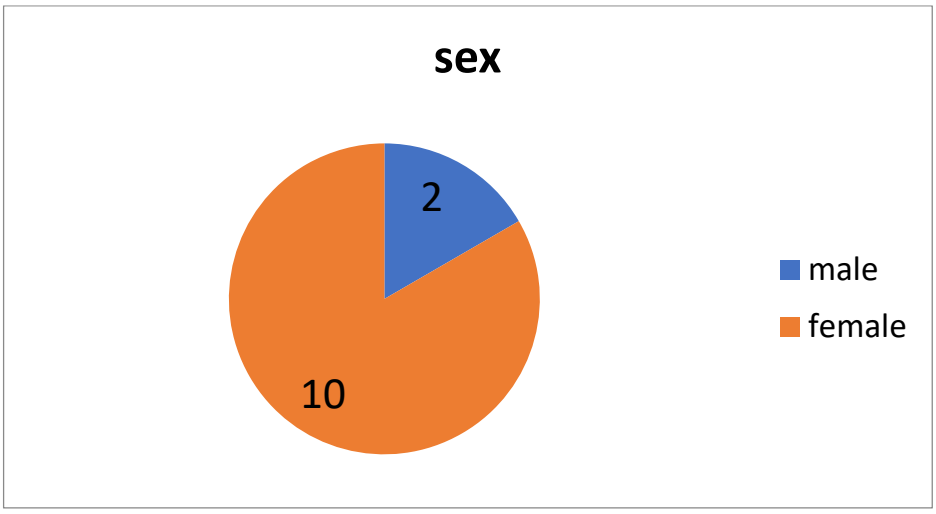
During the month of March and April 2024, temperature in Tamilnadu reached sky high.It went max up to 112°C. Heat stroke has high mortality, with rates ranging from 21 to 63 percent (. Epstein Y et al Nejm2019, Ebi KL et al Lancet 2021).

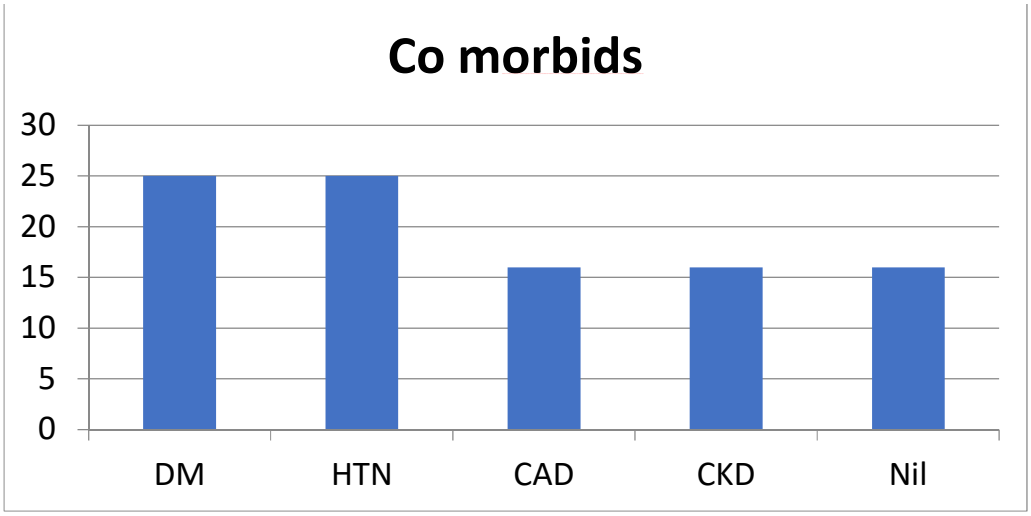
Mortality correlates with the degree of temperature elevation, time to initiation of cooling measures, and the number of organ systems affected leading to anuria, coma, and cardiovascular failure.

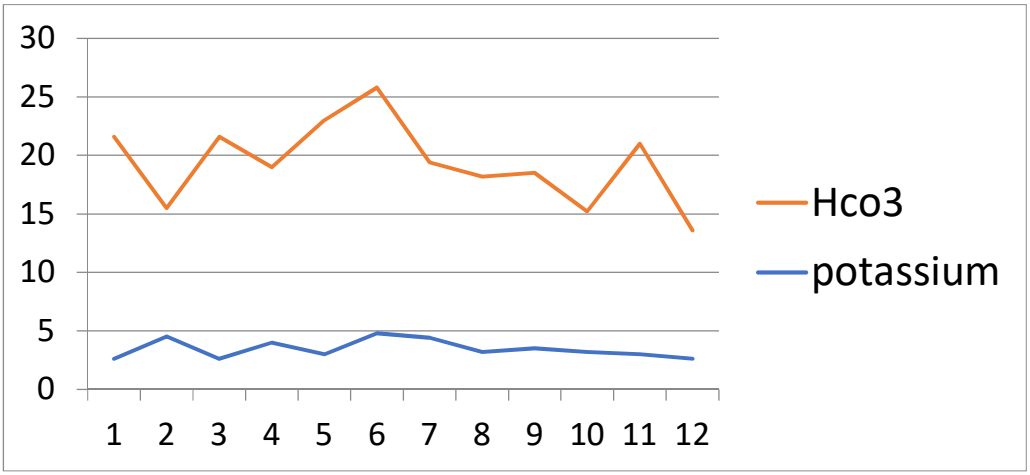
In our ER we have received around 12 patients with temperature of above 40°C within months of March to April 2024. Rectal thermometer and esophageal thermometer were used for measurement of core temperature.

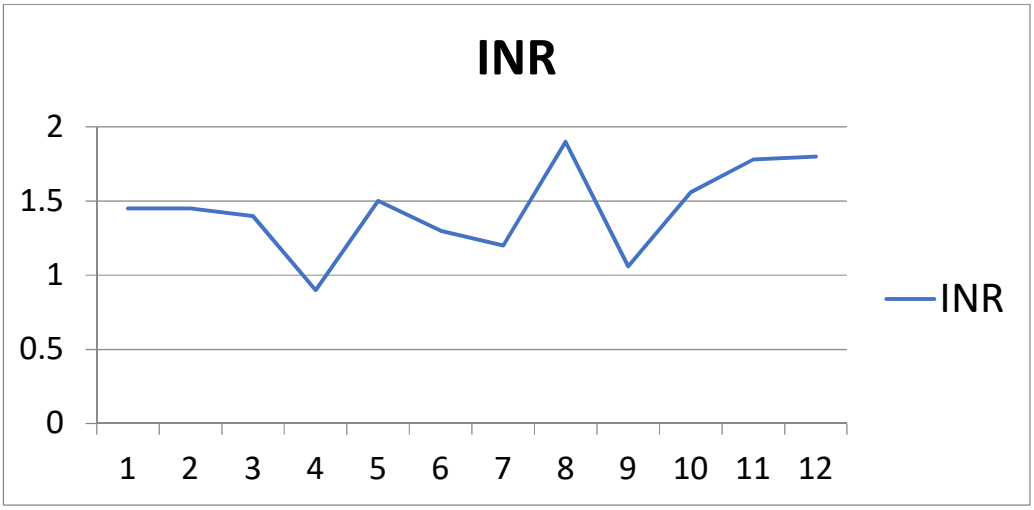
2. Results and Discussion

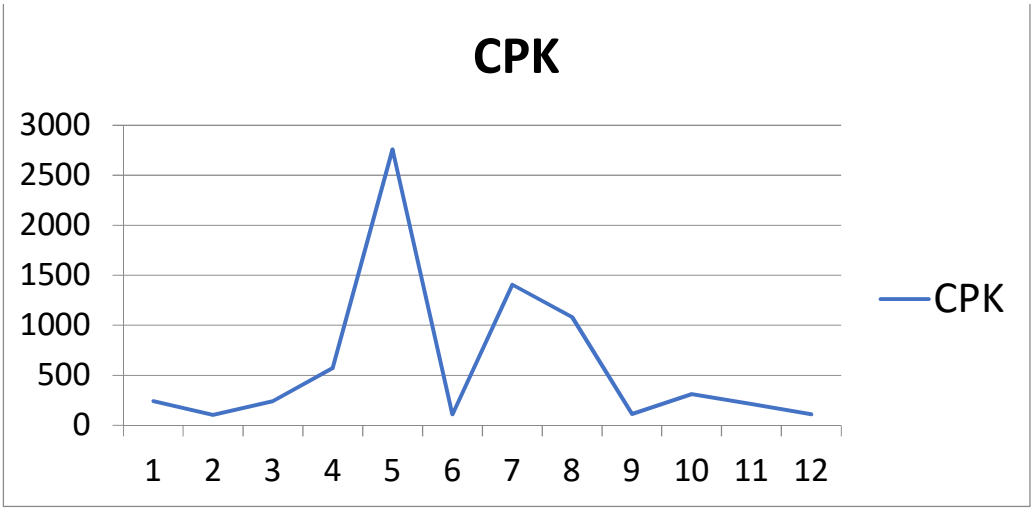


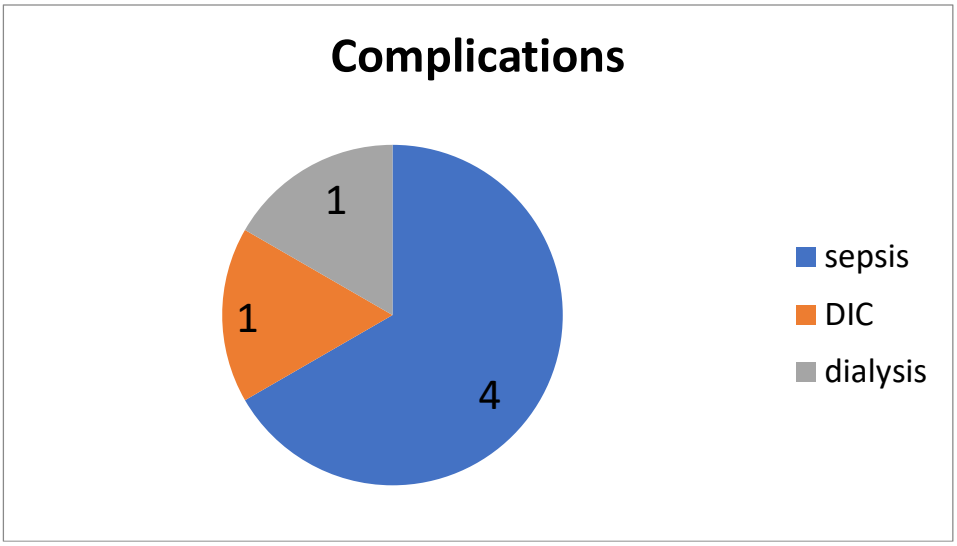


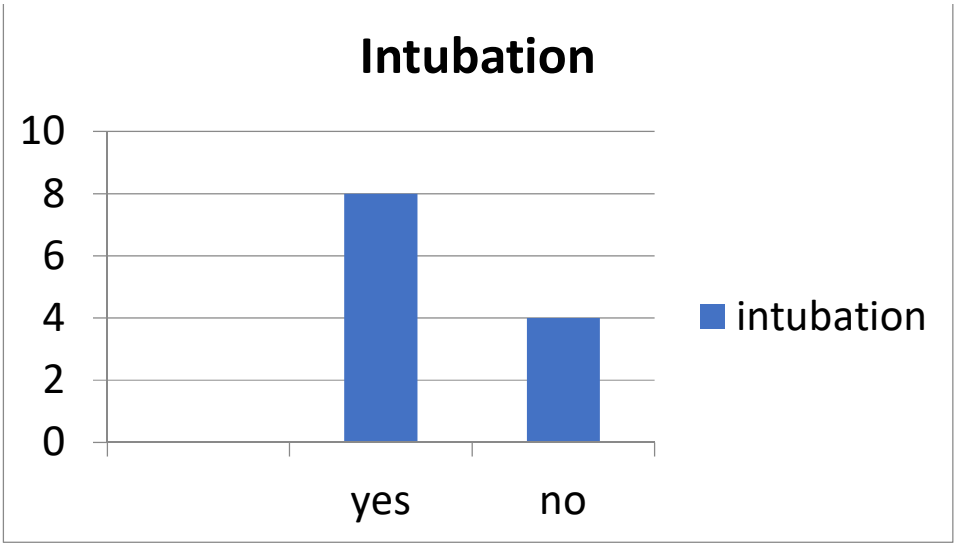

Co morbids
30
25
20
15
10
5
0
DM
HTN
CAD
CKD
Nil

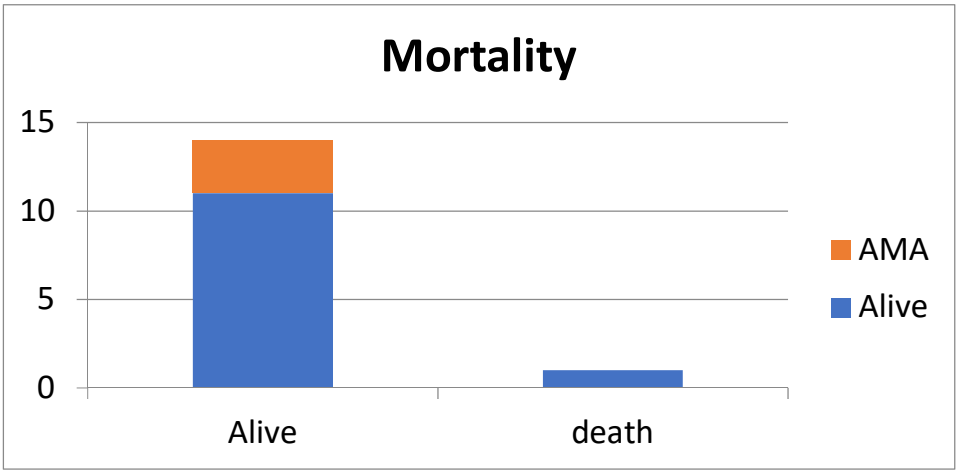

30
25
20
15
10
5
0
1 2 3 4 5 6 7 8 9 10 11 12
Hco3
potassium


INR
2
1.5
1
0.5
0
1 2 3 4 5 6 7 8 9 10 11 12
INR


CPK
3000
2500
2000
1500
1000
500
0
1 2 3 4 5 6 7 8 9 10 11 12
CPK


Complications
1
1
4
sepsis
DIC
dialysis





3. Management

- Mainstay of treatment lies in reducing the core temperature not less than 102°F in initial 2hr
- Cold saline infusion, ice pads, wet sheets were used to control the temperature.
- Neurological care and preventing from sepsis becomes the next.
- Since it involves multiple systems of our body (Kidney, liver, gut, muscle) addressing the corresponding systems needs to be done.
- After timely diagnosing and appropriate treatment the outcome was good
- The awareness regarding heat related illness is still inadequate
- Education regarding the preventive measures should be done.
- It is easy to prevent than treating

- Despite accumulated knowledge and experience, deaths during heat waves are still common and have been associated largely with social isolation in vulnerable populations, lack of air conditioning, and increases in heat during large gatherings for cultural or religious purposes.

4. Preventive measures

Weather forecast regarding heat waves

- Use of social media
- Avoidstrenuous physical work
- Hydration
- Clothing
- Ventilation.