

Clinical Profile of a Firework Disaster

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Abstract

Background

Disasters can be natural/man-made. Natural disasters are usually unpredictable and the public and administration will be unprepared. Man-made disasters are usually preventable and may vary from collapse of buildings or bridges, oil or gas leaks, fire explosions, nuclear plant explosions or a terrorist attack. This study is based on the clinical profile of patients admitted following a firework accident that occurred in a temple of Kerala state in India on the 10 th of April 2016, in which around 1500 people were injured and 121 lost their lives. 1039 injured were treated as out-patients and another 410 as in-patients in various hospitals in Kolla and Thiruvananthapuram districts of Kerala.

Objective

To study the clinical profile of in-patients admitted with trauma and/or burns following the firework accident.

Aim

To evaluate the clinico-pathological profile of patients treated following firework disaster.

Materials and methods

Study Design- Descriptive study using inpatient records from hospitals where they were treated

Study setting- Secondary and tertiary care centres in Kollam and Thiruvananthapuram districts of Kerala

Study subjects- All inpatients of firework disaster

Study method- Relevant details collected from inpatient records

Statistical analysis- statistical analysis done using SPSS

Results

Sex distribution- 95.6 % were males

Age- Mean age was 36.9(+/- 13.8) yrs and major age group affected was 20 – 50 yrs (66.1%)

Treatment centre – 54.4 % treated in secondary care and 45.6% in tertiary care centres.

Treatment facility rendered- 79.5% were treated in surgical wards and 20.5% in various intensive care units.

Type of injuries sustained in the blast-

- 78.2% had traumatic injuries alone.
- 19.8% had trauma and burn injuries together.
- 2% had isolated burn injuries.

Extend of burn injuries-

- 6.7% had > 60 percentage of body surface area involved
- 7.9% had 40-60% of body surface area affected.
- 85.4% had < 40% body surface area involved.

Surgical interventions done-

28% of in patients underwent some form of surgical intervention.

Surgeries performed were as follows-

43.5% were orthopaedic surgeries, 24.3 % required combined surgical interventions from different specialities, 11.3% required plastic surgical interventions, 11.3% needed neurosurgical interventions, 7% had general surgical interventions, 1.7% underwent thoracic surgery and 0.9% had ophthalmic surgeries done.

Hospital stay-

45.4% had hospital stay of < 1 week duration, 31% had stay between 1-2 weeks, 16.6 % had stay between 2-3 weeks, 7.1% had stay for > 4 weeks.

Outcome

- 97.1% of the total inpatients survived. Among them 74.2 % were completely cured and 25.8% had disabilities.
- **Death-**2.9%
- **Morbidity-** 25.8% were disabled of which 4.8% had permanent disability and 21% had temporary.

Conclusion

The management protocols followed in treating the in patients of this fire work disaster was apt, resulting in strikingly low mortality rate (only 2.9%) which is comparable to international standards. Proper co-ordination between different specialties in the management played a key role in giving good results here and it shows that good team work brings about better outcome.