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8. SUMMARY AND CONCLUSIONS

The present study was undertaken to focus light upon the pattern of abdominal and pelvic injuries in relation to various factors in the Central Delhi. A total number of 122 cases were studied from 1st March 1996 to 15th February, 1997. The results of the present study are summarized as follows:

1. Majority of the victims were male (90.16%).

2. Youngsters in the age group of 21-30 years (38.52%) were most commonly involved in trauma cases.

3. Vehicular accidents occurred with maximum frequency (18% of cases) during the time period interval of 9.01 P.M. - 12 A.M. (Midnight) followed by the time interval of 6.01 P.M.-9 P.M. (15% of cases).

4. Lower socio-economic class of people constituted maximum number of cases, that is, 52.45% of total 122 cases and 57% of 100 vehicular accident cases.

5. 19.67% of cases of abdominal and pelvic trauma were spot dead at the scene of incident (nil survival period).

6. 19.67% of cases of abdominal and pelvic trauma were brought dead to the hospital.

7. It was noticed that youngsters of second and third decade, victims with low ISS scores, and victims with associated injuries of chest had a long survival period.

8. Majority of the injuries were non-penetrating/blunt (94.26%) and maximum number of these cases (81.96%) were due to vehicular accidents. Redline buses were found to be the main offending vehicles in road traffic accidents (38% of the cases). Most common category of victims involved in vehicular accidents were pedestrians (53%).

9. The knives were responsible for maximum number of penetrating injuries (71.43%) as compared to firearm injuries (28.57%).

10. Liver was involved in majority of the victims (72.13%) followed by spleen in 43.44% and mesentery in 31.97% of the cases. The main causative factor for these injuries was road traffic accidents.

11. Maximum number of victims (63.11%) had multiple intra-abdominal injuries.

12. Isolated abdominal and pelvic injuries were found in 10.65% of total cases. Associated injuries to two and more than two body regions (head, chest and limbs) were found in majority of cases (55.74%).

13. Incidence of diaphragm injuries is 13.11%. Majority of cases (75%) were due to blunt trauma which was caused by vehicular accidents in 91.67% of the cases. Right hemi-diaphragm was involved in the ratio of 1.5:1 over left hemi-diaphragm.

14. Incidence of omentum injuries is 17.21% and majority of the injuries were contusions (90.48%).

15. Majority of the liver injuries (94.32%) were due to blunt trauma and vehicular accidents accounted for maximum number (93.98%) of these blunt injuries. Right lobe of liver was involved in majority of the cases (57.95%). Associated rib fractures were present in 64.77% of the cases.

16. All cases of spleen injuries were due to blunt trauma produced by vehicular accidents in 86.79% of the cases. The most common category of victims involved in spleen injuries was pedestrians (50.94% of the cases). Associated rib fractures were present in 64.15% of the cases.

17. Incidence of pancreas injuries is 9.84%. Majority of the cases (83.33%) were due to blunt trauma with vehicular accidents as causative factor in 90% of the cases. 33.33% of the cases were found associated with stomach injuries.

18. Incidence of adrenal gland injuries is 4.10%. All the cases were due to vehicular accidents and showed associated kidney injuries.

19. Incidence of stomach injuries is 6.56%. Blunt trauma was responsible for 62.50% of stomach injuries and all of these cases were due to vehicular accidents.

20. Incidence of small bowel injuries is 11.47%. Majority of the cases were due to blunt trauma with vehicular accidents as the main causative agent (92.31% of the cases).

21. Incidence of large bowel injuries is 9.02%. Majority of the cases (81.82%) were due to blunt trauma produced by vehicular accidents. Large bowel injury was commonly found to occur at the junction of mobile and immobile parts of the bowel.

22. Incidence of gall bladder injuries is 1.64% (two cases) with vehicular accidents as the causative agent producing blunt trauma.

23. The main cause of peritoneal haemorrhage was combined liver and spleen injuries (36.19%), followed by injuries to liver alone (35.24%).

24. Incidence of retro-peritoneal haemorrhages is 4.92%. 50% cases of these retro-peritoneal haematomas/haemorrhages were due to pelvic fractures following vehicular accidents.

25. Majority of the mesenteric injuries were due to blunt trauma with vehicular accidents as the causative agent in 88.89% of the cases. Contusion injury was noted in majority of the cases (61.54%). Associated bowel ruptures were found in 35.90% of the cases.

26. Incidence of vascular injuries is 4.92%. Majority of the cases (83.33%) were produced by blunt trauma following vehicular accidents. Combined abdominal aorta and inferior vena cava injury was found in majority (66.67%) of the cases.

27. Incidence of kidney injuries is 29.51%. 91.67% of the kidney injuries were due to blunt trauma with vehicular accident as the predominant causative agent.

28. Urinary bladder was injured in 12.29% cases and all of these cases were due to vehicular accidents producing blunt trauma injuries. All cases were associated with fractures of pelvis.

29. Urethral injuries were observed in 4.1% cases following vehicular accidents producing blunt trauma. Majority of the cases (60%) showed combined pelvic bone fractures and fracture separation of pubic symphysis.

30. Incidence of uterine injury is 0.82%. It was observed in 8.33% of the female victims of abdominal and pelvic trauma following vehicular accidents.

31. Ovaries were injured in 0.82% cases following vehicular accidents involving 8.33% of the female victims of abdominal and pelvic trauma.

32. Pelvic bone fractures were observed in 47.54% cases and all these cases were due to blunt trauma of the abdomen and pelvis. Majority of blunt trauma injuries (94.83%) were produced by vehicular accidents.

33. Incidence of lumbar spinal column injuries is 5.74%. 71.43% of these injuries were due to blunt trauma with vehicular accidents as the causative agent in 80% of the cases.

34. Incidence of sacrum injuries is 1.64% (2 cases). Both cases were produced by blunt trauma following vehicular accidents.

35. Main cause of death was haemorrhagic shock (51.64% of the cases) followed by combined effect of head injury and haemorrhagic shock (40.98% of the cases).

36. Injury Severity Score (ISS) of the vehicular accident cases in the present study ranges from 13 to 75. ISS was found to be of paramount importance in multiple injury cases following vehicular accidents. The relationship between ISS and survival period showed that higher the ISS value, lower is the survival period and vice versa.

At the end, it may be said that all abdominal and pelvic injuries constitute a potential factor in increasing the amount of morbidity and mortality and therefore proper attention towards their accurate diagnosis and satisfactory management is mandatory. ISS relationship with survival period can be of great value for prognostic assessment of the cases of vehicular accidents. Last but not the least, a multidisciplinary approach is required for treating trauma victims so that more severe injury takes priority over less severe injury. All the patients of head injury admitted with coma and developing shock soon after, must be considered as having intra-abdominal injury until proven otherwise.