Table 1 - Relationship between nm23, PCNA reactivity and clinicopathological features osteosarcomas.

Parameter	nm23		Significance	PCNA		Significance
	Low (%)	High (%)		<40 (%)	≥40 (%)	
Gender						
Female	12 (23.5)	14 (27.4)	ns	19 (37.2)	7 (13.7)	ns
Male	9 (17.6)	16 (31.3)	ns	16 (31.3)	9 (17.6)	ns
Age (years)	16.04 -	16.1 -	ns	15.9 -	16.4 -	ns
Grade						
Low	5 (9.8)	- -	*p*=0.05, r=-0.27	4 (7.8)	1 (1.9)	ns
High	21 (41.1)	25 (49)	*p*=0.05, r=-0.27	31 (60.7)	15 (29.4)	ns
DFS (months)	44.7 -	36.6 -	ns	29.5 -	62.7 -	*p*=0.008, r=-0.366
IVI						
(+)	15 (29.4)	26 (50.9)	ns	29 (56.8)	12 (23.5)	ns
(-)	6 (11.7)	4 (7.8)	ns	6 (11.7)	4 (7.8)	ns

DFS - disease free survival, IVI - intravascular invasion, PCNA - proliferating cell nuclear antigen, ns - not significant

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References

1. Unni KK. Introduction and scope of study. Dahlin's Bone Tumours. 5th ed. Philadelphia (PA): Lippincott-Raven; 1996. p. 1-21.
2. Cappello F, Rappa F, David S, Anzalone R, Zummo G. Immunohistochemical evaluation of PCNA, p53, HSP60, HSP10 and MUC-2 presence and expression in prostate carcinogenesis. ***Anticancer Res*** 2003; 23: 1325-1331.
3. Kontogianni K, Demonakou M, Kavantzas N, Lazaris ACH, Lariou K, Vourlakou C, et al. Prognostic predictors of gastrointestinal stromal tumors a multi-instutional analysis of a prognostic index. ***Eur J Surg Oncol*** 2003; 29: 548-556.
4. Lee KE, Lee HJ, Kim YH, Yu HJ, Yang HK, Kim WH, et al. Prognostic significance of p53, nm23, PCNA, and c-erbB-2 in gastric cancer. ***Jpn J Clin Oncol*** 2003; 33: 173-179.
5. Maga G, Hubscher U. Proliferating cell nuclear antigen (PCNA): a dancer with many partners. ***J Cell Sci*** 2003; 116: 3051-3060.
6. Ayhan A, Yasui W, Yokozaki H, Kitadai Y, Tahara E. Reduced expression of nm23 protein is associated with advanced tumour stage and distant metastasis in human colorectal carcinoma. ***Virchows Archi B Cell Pathol*** 1993; 63: 213-218.

Medicolegal deaths in children and adolescents

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Accidents are the leading causes of death in all industrialized countries, and in a growing number of developing countries. Trauma is a major cause of death in children, especially those between 5-14 years. Fatal injuries are causing increasing concern from the age of one year up to adulthood. An analysis of the causes showed that most were preventable.[1,2] The situation in our country, and in our region, is not adequately known. In the present study, we describe the epidemiology of child and adolescent (0-18 years) mortality in Diyarbakir, Turkey over a recent 4-year period, and discuss both the leading causes of injury and available prevention measures.

We retrospectively reviewed all forensic cases referred to the Diyarbakir City forensic section, during the 4-year period 2000-2003. Of these, we analyzed all children and adolescent deaths and included victims younger than 19 years of age in our study. We considered the case file information from the autopsy reports and hospital reports for age, gender, origin, cause and manner of death, season, and the state of hospitalization before death.

Between 1 January 2000 and 31 December 2003, 690 (29.4%) pediatric and adolescent medicolegal deaths were investigated among 2,343 medicolegal deaths. There were 437 (63.3%) males, and 253 (36.7%) females aged from 4 days to 18 years, with a mean age of the 7.83 ± 3.8 years. The majority was in the groups aged 0-5 years (36.7%). There were 567 (82.2%) victims of accidental death, 84 (12.2%) victims of suicide, and 39 (5.6%) victims of homicides. Accidents were most frequently seen as a cause of death in the 0-5 years (44.3%), but homicides (66.7%), and suicides (72.6%) in the 16-18 years age group. Most accidental (66.5%) and homicidal (74.4%) deaths were among males, and suicides among females (63.1%). The most frequently seen cause of death was traffic accidents (32.7%), followed by fall from height (23.7%), and firearm (9.1%) **(Table 1)**. Only deaths due to hanging displayed a female predominance (69.4%). There was an increase in children and adolescent fatalities in the summer season (34.2%). Of these, 325 (47.1%) were dead on arrival at hospital, 53 (7.7%) died during intervention within 24 hours, and 312 (45.2%) died during treatment after 24 hours.

Table 1 - Type of mechanism leading to deaths among childred and adolescents.

Type	Male	Female	Total n (%)
Traffic	161	64	225 (32.7)
Firearm	42	21	63 (9.1)
Stabbing	8	2	10 (1.4)
Hanging	11	25	36 (5.2)
Fall from height	103	60	163 (23.7)
Drowning	26	15	41 (5.9)
Electrocution	16	17	33 (4.8)
Burning	23	23	46 (6.7)
Poisoning	21	19	40 (5.8)
Stroke	6	1	7 (1)
Suffocation	4	2	6 (0.9)
Accident at work	4	-	4 (0.5)
Crushing	7	4	11 (1.6)
Rabies	1	-	1 (0.1)
Animal kicking	4	-	4 (0.6)
Total	**437**	**253**	**690 (100)**

Deaths in the pediatric age groups are a cause of concern as children are the most innocent and harmless of the community. Most deaths in this age group are preventable, and mostly due to trauma. These rates are similar to the previously reported findings in Turkey.[3,4] In different countries, there was also a male predominance, reported between 56-70%.[1] Boys have a tendency to play outside and participate in activities more than girls that cause greater risk for injuries.

In this study, deaths were most commonly seen in the 0-5 years age group with 253 (36.%) cases; and secondly in the 6-10 years age group with 184 (26.6%) cases. Most of the fatalities have been reported in the 0-5 years age group, as in ours, in the literature.[2] In some others, the most commonly reported age was over 11 years.[2,5] In our study, the most common deaths were accidental in 567 (82.2%) cases, suicide in 84 (12.2%), and homicide in 39 (5.6%). Suicide and homicide are major public health concerns, as significant causes of preventable deaths. However, effective strategies for the prevention of these deaths are difficult. In the study of Rimsza et al,[5] there were 70.8% accidents, 11.4% suicides, and 17.8% homicides. In most others, the results were similar. In our series, deaths due to accidents (66.5%) and homicide (74.4%) were more prevalent among males, while suicides were more frequent among females (63.1%). In another study on suicides in children and adolescents in our region, the female rate (71%) was also reported to be much higher than males.[6] When considering all ages including the children and adults, the situation was similar in our region for suicides with a female rate of 58%. In most other studies, there was a male predominance of marginally higher rates.[5]

In the present study, the most common causes of fatalities were motor vehicle accidents (MVA) in 225 (32.7%) cases, fall from height in 163 (23.7%), and firearm in 63 (9.1%) cases. In our country, traffic accidents were also found to be the most frequent cause of death in previously reported studies.[3,4] In other studies from different countries, the most common cause of death was reported as MVA in 36-64.2% of the fatalities.[2,5] In the United Arab Emirates, Bener et al,[1] reported MVA as the most common cause, followed by drowning and burning. Most falls were from balconies or rooftops due to the tendency of people to sit and sleep on these places during the hotter months of the year. In the current study, deaths had occurred most commonly in the summer in 236 cases (34.2%).

In conclusion, the main methods of reducing trauma-related deaths are either improving treatment of the injured patients or preventing the injuries. Prevention of MVA and fall from height could help in reducing mortality in children in our region, given that more than half (MVA 32.7% and fall from height 23.7%) of the deaths were related to these accidents.

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References

1. Bener A, Al-Salman KM, Pugh RNH. Injury mortality and morbidity among children in the United arab Emirates. ***Eur J Epidemiol*** 1998; 14: 175-178.
2. Arbos-Galdon J, Rovira-Vila M, Llobera-Canaves J, Bonet Mulet M. Childhood accidents in primary health care. ***Rev Sanid Hig Publica (Madr)*** 1995; 69: 97-103.
3. Durak D. Child deaths among medicolegal autopsies. ***Uludag University Medical Journal*** 1999-2000; 26: 5-7.
4. Salacin S, Alper B, Cekin N. Regional characteristics of fatal childhood accidents in Adana. ***J Forensic Med*** 1992; 8: 125-130.
5. Rimsza ME, Schackner RA, Bowen KA, Marshall W. Can child deaths be prevented? The Arizona child fatality review program experience. ***Pediatrics*** 2002; 110: e11.
6. Goren S, Gurkan F, Tirasci Y, Ozen S. Suicide in children and adolescents at a province in Turkey. ***Am J Forensic Med Pathol*** 2003; 24: 214-217.

Evaluation of antisperm antibodies in infertile men associated with varicocele. *Pre and post varicocelectomy*

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In this prospective study, 27 varicocele associated infertile men undergoing microsurgical inguinal varicocelectomy were included. Varicocele was determined by physical examination and Doppler ultrasound and was categorized by a single examiner with the patient standing as follows: grade 1, palpating an impulse in the scrotum during a Valsalva maneuver; grade 2, tortuous veins palpated without Valsalva maneuver; and grade 3, visible through skin. All other probable causes of infertility, like female factor, were excluded through evaluation including history, physical examination, and laboratory tests including complete blood count, urea, electrolyte, and urine analysis. Hormonal studies (serum follicle-stimulating, luteinizing hormone, and testosterone) were carried out if there was severe oligospermia (density $<10 \times 10^6$/ml) or if there was any indication with regards to history and examination. Semen analysis and antisperm antibodies were measured by the spermMar test performed preoperatively and postoperatively at 6 months. Any risk factors, like history of trauma, torsion, cryptorchidism, vasectomy or vasectomy reversal, genitourinary infection and previous inguinal surgery were also considered. Semen was collected by masturbation into sterile, wide mouthed containers approximately 72 hours after the last abstinence. By the time of liquefaction, the sample was divided for semen analysis and sperm antibodies assay. Semen analysis was performed routinely and using x40 of microscope, Neubauer hemacytometer and papanicolaou staining method. The different parameters of sperm such as motility, density, and morphology were examined. Seminal and serum sperm antibodies [immunoglobulin G (IgG), immunoglobulin A (IgA)] were measured by 2 methods of direct and indirect spermMar test (Ferti Pro NV, Belgium).

In the direct spermMar test, one drop of semen was placed on a microscope slide adjacent to a drop of latex reagent and a drop of antiserum either IgG or IgA. The 3 drops were mixed together with a cover slip and was then used to cover the mixture. After 2-3 minutes, the slide was examined under a microscope and the percentage of motile sperm bound to the latex beads was scored. According to the manufacturer, a score of 40% or more indicates a high probability of immunologic infertility, and a score of 1-39% indicates that immunologic infertility is suspected.

In the indirect spermMar test, blood and seminal plasma were first inactivated by heating at 56°C for 30 minutes and then diluted with 1/4 Ham's F-10 medium containing 10% Albuminar-5 (containing 5% human serum albumin, Blood Research Center, Tehran, Iran). Fresh sperm from a fertile donor washed twice and allowed to swim up in Ham's F-10 medium. Afterwards the sperm concentration was adjusted to 20×10^6 sperm/ml with Ham's F-10. While 100 µl of the suspension of motile donor sperm was incubated with 100 µl of inactivated seminal plasma or serum, which had been diluted in 1/4 Ham's F-10 medium for 1 hour at 37°C. The sperm were then washed 3 times, re-suspended in 50 µl of Ham's F-10 medium, and then tested for membrane bound antibodies similar to that of the direct spermMar test. Data were collected and analyzed using Wilcoxon Signed Ranks and ANOVA test.

The mean age of the patients was 28.7 years (23-42 years), and the mean of the infertility duration was 4.29 years (1-11 years). All had left varicocele (grade one: 2 patients, grade 2: 17 patients, grade 3: 8 patients) and 7 had right varicocele who underwent right varicocelectomy as well. Hormonal studies were performed in 6 patients, all of them had severe oligospermia and negative antisperm antibody. It was normal in 4