Journal of Rawalpindi Medical College (JRMC); 2009;13(2):63-65

Medicolegal Evaluation of Suspected Alcohol Consumption

Rizwana Qayyum*, Muhammad Khurram*, Abdul Mateen*, Omar Hyder*, Zubair Hasan**, Abdul Wahid Shah*
*Rawalpindi Medical College and Allied Hospitals, Rawalpindi
**PAEC Hospital, Islamabad

Abstract

Background: **To note diagnostic methodology employed by medicolegal officer for evaluation of subjects brought by Police for confirmation of suspected alcohol consumption.**

Methods: **In this cross sectional, observational study,. data of subjects evaluated for suspected alcohol intake was retrieved. Police statement regarding reason for suspecting alcohol consumption, statement of the subjects accused of alcohol consumption, examination findings of medicolegal officer (MLO), details regarding chemical evaluation of body fluids, and conclusion or final report of MLO were sought.**

Results: **3253 subject's details were available. 97% (n=3165) of these were making noise with or without din, when apprehended. Standard procedure for evaluation of suspected alcohol was not followed by MLO in most of cases. MLO gave a positive final opinion for alcohol consumption in 95.2% (n=3099) subjects. In 93.12% (n=2887) of these subjects, it was substantiated by laboratory report, while in 6.84% (n=212) subjects no laboratory evaluation was sought. A negative opinion about alcohol consumption was given in 3.50% (n=114) of the subjects. Police suspicion of alcohol consumption and positive final opinion by MLO correlated significantly(p value <0.00001).**

Conclusion: **Police suspicion of alcohol intake and positive medicolegal opinion (clinical and laboratory) of alcohol intake correlate significantly. Medicolegal officers do not comply with standard operating procedures in most of cases.**

Key words: **Alcohol consumption, Medicolegal.**

Introduction

In Western countries alcohol intoxication rather than consumption is an offence, which is defined as blood alcohol concentration of at least 0.08–0.10 g/dL. In Pakistan consumption, possession and distribution of alcoholic beverages by a person other than certain minority religious groups are punishable offences.[1] The sight of a patient accompanied by the Police being brought to a hospital for evaluation of alcohol intake is not uncommon in Pakistani, government-run hospitals. Following examination by medicolegal officer (MLO), which may be aided with chemical analysis of blood and urine, a report is issued regarding whether the person has consumed alcohol or not.[2,3] A positive report can potentially lead to imprisonment and lashing after trial in a court of law.[1,4] It has been well known that many of the positive reports are issued on basis of what Police says rather than clinical and laboratory evaluation.[5]

District Headquarter Hospital, Rawalpindi is hub of medicolegal examinations pertaining to Rawalpindi district. Huge data pertaining to all sort of medicolegal cases including alcohol consumption is available here, of which only self inflicted injuries have been analyzed and published.[6] This study was planned to note diagnostic methodology employed by MLO for evaluation of subjects brought by Police for confirmation of suspected alcohol consumption.

Subjects and Methods

This cross sectional, observational study was conducted at Rawalpindi Medical College, Rawalpindi from October 2008 to May 2009. Ten year (July 1991 to June 2001) record, regarding medicolegal evaluation of subjects with suspected alcohol consumption was retrieved.

According to local standard operating procedure, a subject with suspected alcohol intake is brought by Police with official document which states reasons for conducting examination. MLO records statement of the subject and examines him. Examination is mainly focused on general appearance of the subject and his clothes, behavior, attention, vitals, orientation, cooperation, breath alcohol odour, coordination, and tendon reflexes. MLO may give opinion based on examination only or may send body fluid samples (blood and urine) additionally to government run chemical laboratory and subsequently issues report according to the results.

At the chemical laboratory, evaluation for presence or not of alcohol in body fluids is performed by alcohol dehydrogenase method. In this method, mixing of body fluid containing alcohol with alcohol dehydrogenase causes acetaldehyde production which is then taken as indicator of alcohol's presence in body fluid.

Subjects with following available information were included: 1) Police statement, 2) examination carried about by MLO within 1 hour of presentation,

and 3) final decision regarding alcohol consumption or otherwise was available. Subjects in whose case such information was lacking were excluded.

Following data was sought regarding each case; 1) Police statement regarding reason for suspecting alcohol consumption, 2) statement of the subjects accused of alcohol consumption, 3) examination findings of MLO, 4) details regarding chemical evaluation of body fluids, and 5) conclusion or final report of MLO. Obtained data was converted into variables which were analyzed using Statistical Package for Social Sciences, version 12. Descriptive statistics were calculated for all variables. Fisher's exact test was used for calculating p value.

Results

Record of 3411 male subjects was retrieved. 95.4% (n=3253) of these were included and 4.6% (n=158) excluded as inclusion criteria were not being fulfilled. According to Police statement 97% (n=3165) subjects were making noise with or without din, when apprehended. 1.32% (n=43) of the subjects were found unconscious, 0.8% (n=27) were acting abnormally, and 0.55% (n=18) subjects were found in an unconscious and injured state.

Table 1 Details of examination components.

Examination components	Performed/ noted	Not performed/noted
Statement of alleged alcoholic	0 (0%)	3253 (100%)
Appearance of clothes	828 (25.4%)	2425 (74.6%)
Behavior	2149 (66%)	1104 (44%)
Drunken gait	0 (0%)	3253 (100%)
Vital signs	1060 (32.6%)	2193 (67.4%)
Orientation	1271 (39%)	1982 (61%)
Breath alcohol odor	2939 (90.3%)	314 (9.7%)
Cooperation	158 (4.8%)	3095 (95.2%)
≥1 Tests of coordination	2036 (62.6%)	1217 (37.4%)
Tests for divided attention	0 (0%)	3253 (100%)
Reflexes	1521 (46.7%)	1732 (53.3%)
Nystagmus	241 (7.4%)	3012 (92.6%)
Ability of eyes to converge	0 (0%)	3253 (100%)
Dark room examination	0 (0%)	3253 (100%)

Statement of the subjects was not recorded by MLO in any case. Clinical examination details were not available in many of cases. Details regarding whether a component of standard examination was conducted or not by MLO are given in Table 1. Details regarding examinations conducted and abnormalities detected by MLO are given in Table 2.

In case of 92.7% (n=3016) subjects, MLO went for chemical analysis of body fluids (blood, urine, and vomitus). 0.64% (n=21) of the subjects refused to comply. Samples of 2996 subjects were thus sent to laboratory. In 98.39% (n=2974) of these, both urine and blood samples were sent, in 0.46% (n=14) only blood sample was sent, and in 0.233% (n=7) only urine was sent. Chemical analysis of body fluids showed traces of alcohol in 96.3% (n=2887) of samples. 2.27% (n=68) turned out negative for alcohol while the reports of 1.33% (n=40) samples were missing.

Table 2 Details of abnormalities detected

Appearance of clothes	
Normal	37
Torn, stained or otherwise abnormal	791
Behavior	
Talkative/abusive	1307
Normal	842
Vital signs	
Normal	1017
Abnormal	43
Orientation	
Disoriented	971
Oriented	300
Breath alcohol odour	
Positive	2507
Negative	432
Cooperation	
Cooperative	17
Uncooperative	141
Coordination	
Impaired	1719
Normal	317
Reflexes	
Depressed	1521
Normal	0
Nystagmus	
Positive	241
Negative	0

MLO gave a positive final opinion for alcohol consumption in cases of 95.2% (n=3099) subjects. In 93.12% (n=2887) subjects it was substantiated by laboratory report, while in 6.84% (n=212) subjects, no laboratory evaluation was sought. A negative opinion about alcohol consumption was given in 3.50% (n=114) of the subjects. Of these, 59.64% (n=68) were based on

laboratory report, and 40.35% (n=46) without. 1.33% (n=40) records were lost by the laboratory and no decision was taken in those cases. Police suspicion of alcohol consumption and positive final opinion by MLO correlated significantly(p value <0.00001). Of the 43 subjects who were found unconscious, 6.9% (n=3) were declared to have consumed alcohol. Similarly 11.1% (n=2) of unconscious and injured subjects (n=18) were reported to have taken alcohol.

Discussion

Two interesting findings of this study are; 1) MLO as well as Police did not comply with standard operating procedures in most of cases, and 2) Police suspicion of alcohol intake in subjects who were 'making a noise' or 'making noise and din' correlated significantly with positive medicolegal opinion (clinical and laboratory) of alcohol intake.

It is not possible to compare results of this study with Western/non Muslim world, as in their circumstances, it is alcohol level and associated intoxication rather mere intake against which law comes into action. Clinical decisions regarding alcohol intake may be highly inaccurate. In a Jordanian study, only 12.6% of persons suspected of alcohol intake were positive for alcohol on laboratory evaluation.[7] In a related Pakistani study from Karachi, 30% (n=78) of 260 persons brought by Police with suspected alcohol intake were evaluated by MLO for alcohol intake while the rest were disposed on clinical grounds.[2] In this study, laboratory results for alcohol in blood and urine were positive in 51% suspects only.

Elation and altered mental status are not restricted to acute alcohol intake and intoxication. A number of drugs such as cannabis and amphetamines, hypo-manic states and metabolic disorders can lead to this sort of behavior in otherwise normal individuals.[5,6] None was sought or diagnosed in any case. Findings like ours are expected in a country where casualty medical officers in the government run hospitals are known to accept whatever police says.[5] This either means that our police is highly efficient or that an unethical connection exists between Police and MLO. Serious doubts arise when results regarding alcohol intake in unconscious alone and injured unconscious persons are considered.

MLO's adherence to standard operating procedures was disappointing. Full examination procedure was not completed in even a single case. Record of vital signs was not available in 67.4% of patients. Clinical tests which are indicator of alcohol intake like observation for drunken gait, and integral components of sobriety tests were not performed in most of cases.[8,9]

Subjective assessment of alcohol in breath was employed in most of cases to clinically diagnose alcohol intake. It is notable that breath alcohol analyzer facility is not available in Pakistani hospitals conducting such examinations.[3] No patient was interviewed or his statement recorded. Detailed medical history specifically of medications containing alcohol is very important as laboratory reports are qualitative rather than quantitative. Innocent persons can be blamed of alcohol intake in this scenario if they have taken alcohol containing medicines.

This study shows that many flaws exist in medicolegal evaluation of a person with suspected alcohol intake. These include; 1) lack of compliance with standard operating procedures by MLO, 2) subjective assessment, 3) non availability of breath alcohol analyzers, 4) believing Police blindly. Appropriate administrative measures are required to circumvent these problems; otherwise many innocent persons can be punished without committing a crime.

Conclusion

Police suspicion of alcohol intake in subjects who were 'making a noise' or 'making noise and din' correlates significantly with positive medicolegal opinion (clinical and laboratory) of alcohol intake. Medicolegal officers do not comply with standard operating procedures in most cases.

References

1. Prohibition (Enforcement of Hadd) Order, 1979 (P.O. No. 4 of 1979).
2. Mirza F, Arif K. Acute alcohol intoxication: prevalence, recognition and medicolegal importance. J Pak Med Assoc 1999; 49(9): 220-21.
3. Chaudhry A. Muslims more prone to liquor consumption. Daily Nation (Lahore edition). 2007 December 10.
4. Forensic Toxicology. In: Sefarstein R, ed. Criminalistics: An Introduction to Forensic Science. 7th ed. New Jersey: Prentice Hall, 2001; p. 282-86
5. Bravo Pakistani Police. Weekly Pulse (Islamabad). 2007 Sept 21-27; 119(XII): 18.
6. Hasan Z, Rehman A, Khurram M, Shah W. Self-inflicted injuries: the standing medical board experience. J Coll Phy Surg 2002; 12(9): 518-21.
7. Abder-Rahman HA, Hadidi KA, Battah AH. Reliability of clinical decisions regarding alcohol influence. J Clin Foren Med 1999; 6(3):141-44.
8. Stuster J. Validation of the standardized field sobriety test battery at 0.08% blood alcohol concentration. Hum Factors 2006; 48(3): 608-14

9. Shinar D, Schechtman E. Drug identification performance on the basis of observable signs and symptoms. Accid Anal Prev 2005; 37(5): 843-51.