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Detection of the E-Cadherin promotor methylation in crystal abusers

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Introduction: Crystal addiction has increased markedly among the Asian. Prevalence Crystal abuse in young population of Iran is a great health problem, we researched to know how the molecular mechanisms of Crystal is in vivo. Crystals which are used in Iran consist of heroin's component. The illegal makers concentrate heroin and sell as Crystal, so Crystal effect as same as heroin but worse than it. Heroin as a non-mutagen which increases cancer rates was thus proposed as tumor promoting agent. On the other hand, loss of E-Cadherin expression has been linked to the invasive behaviour of tumor cells and so methylation patterns may be useful biomarkers of cancer detection and risk assessment.

Material and Methods: Our finding suggested; Detection of methylation E-Cadherin should be investigated as intermediate marker for cancer risk assessment. We examined briefly on Crystal addicts entered a methadone maintenance treatment program. In the present work we have studied aberrant E-Cadherin promoter methylation in 50 Crystal addicts by means of MSP (Methylation Specific PCR) method. We extracted DNA from blood sample and treated with bisulfate and then methylation - Specific PCR has done.

Results: 31% of our samples were hyper methylated. There were any significant between sex, age and abusing manner. There was significant correlation between time of Crystal abuse and E-Cadherin gene methylation.

Conclusion: Although there is any similar study on Crystal addiction, many other studies have been on gene methylation in cigarettes smokers and tobacco smokers. Early cytogenetic experiments showed that diacetylmorphine abuse (Heroin) was associated chromosome aberrations. Studies have shown that cigarette smoking caused increasing leukocyte count that may be resulted from migration of leukocytes from other types of lymphoid organs to peripheral blood. In our study we didn't find any correlation between cigarette smoking, sex and usage way, but it isn't reliable result because of low range of sample size. There was a significant correlation between the time of Crystal usage and E-Cadherin gene methylation. In over 80 month abusers (increasing usage time) E-Cadherin gene methylation was increased. We should increase our study in other research.

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