ORIGINAL ARTICLE

A Comparative Study of Hepatitis B and C Prevalence Using ICT and Elisa Method in jail inmates

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ABSTRACT

Aim: To investigate the diagnostic efficacy of serum anti- HCV & HBsAg by Rapid Immunochromatography test (ICT method) and by Enzyme linked Immunosorbent Assay (ELISA).
Study design: The jail inmates were screened and investigated for the viral infections using commercially available diagnostic kits.
Place of study: This case-control study was conducted during 2010, in 2550 male prisoners at Bahawalpur Jail, under Punjab Hepatitis B & C Control Program at BVH, Bahawalpur.
Diagnostic Criteria: HBsAg positive and anti-HCV by ICT Method, HBsAg surface antigen and anti-HCV reactivity by 3rd generation ELISA method.
Methodology: The prisoners within the age range of 20-65 years were screened by the rapid ICT device (Accurate, UK) using manufacturers standard protocol and later on by ELISA. Statistical analysis of data was undertaken using SPSS-PC.
Results: It was found that 305 were Positive for Anti- HCV and 96 Positive for HBsAg, by rapid ICT method. Follow up was done using 3rd generation ELISA technique. Patients were tested using ELISA & it was found that 139 patients (5.4%) reacted positively. HBsAg positive patients, it was found that only 63 (2.5%) reacted positively by ELISA method.
Conclusion: ICT device screening method is giving false positive results & should be discontinued.
Key words: Hepatitis B & C, Rapid ICT method, ELISA.

INTRODUCTION

Chronic viral hepatitis is a major cause of concern worldwide and for many developing countries in particular it is responsible for increasing morbidity and mortality, which impacts significantly upon the health budgets of many developing countries and their economic performance[1,2]. Both Hepatitis B and C are major causes of liver diseases worldwide and need to be assessed and interpreted carefully. Chronically infected patients often develop progressive liver disease, cirrhosis, hepatic failure, and hepatocellular carcinoma (HCC)[3,4]. It is estimated that by the year 2020-2025, there will be a threefold rise in cirrhosis and hepatocellular carcinoma from HBV and HCV infection from current levels[5]. In chronic viral hepatitis, the prognosis and management of the condition are highly dependent on the extent of liver fibrosis. Additionally, the level of disease activity as well as the frequency of response to anti-viral therapy are strongly influenced by host immune responses as well as viral genotype[6]. Current therapies for HCV include IFN alpha -2a, 2b and pegylated Ribavarin which need to be administered over a prolonged period of time ranging from 6 -12 months duration[6,7].

One to two decade, back data is suggestive of 3.5 million patients suffer from hepatitis B virus with chronic infection[1] with an estimated 1.25 million hepatitis B carriers carriers positive for Hepatitis B surface antigen[6]. In the developed world, pro-operative screening for HBV or HCV is standard practice which has contributed to stemming the transmission of this insidious disease[5,7].

METHODOLOGY

The prisoners within the age range of 20-65 years were screened by the rapid ICT device (Accurate, UK) using manufacturers standard protocol and later on by ELISA. Statistical analysis of data was undertaken using SPSS-PC.

RESULTS

The detail of results is given in table 1

Table 1: Comparison of ICT & ELISA Method

	By ICT Method	By Elisa Method
HCV +ve	305(11.9%)	139 (5.4%)
HBsAg +ve	96 (3.8%)	63 (2.5%)
Negative	2149 (84.3%)	2348 (92.1%)

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DISCUSSION

Enzyme immunoassay (EIA) methods are sensitive tests which are quantitatively accurate. ICT test kits/devices are intended for qualitative detection of HBSAg and anti-HCV in human serum, plasma or whole blood[6]. An ideal rapid test has a high degree of positive predictive value and low degree of false negative results. Short incubation tests do not detect low affinity or low concentration of antibodies/antigens as compared to immunoassays that employ longer incubation times which allows greater time frame for antigen/antibody interaction[7]. his is specially the case when considering low affinity/low concentration of antigen/antibody integration[7]. Public policies and decision makers need to cost/benefit of using such screening methods.

CONCLUSION

ICT device screening method is giving false positive results & should be discontinued.

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