136 - EPIDEMIOLOGICAL ASSESSMENT OF CASES OF HEPATITIS C BASED ON SINAN

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INTRODUCTION

Among the endemic and epidemic diseases, which represent important public health problems in Brazil are as viral hepatitis, its epidemiological behavior in our country and the world has undergone major changes in recent years (FERREIRA, 2004). Although hepatitis C is considered endemic ¬ dial world, there is a wide variation in prevalence, according to geographical areas, reflecting ¬ gicas distinct epidemiological characteristics (MARTINS, 2011). Currently, there are over 170 million people infected with hepatitis C worldwide (MELO, 2007). In Brazil, according to estimates by the World Health Organization (WHO), 3% of the population is infected by this virus (MARTINS, 2011).

The main risk factors for HCV infection are transfusion of unscreened blood products from donors with anti-HCV, intravenous drug use, organ transplantation, hemodynamic ¬ smooth, vertical transmission, sexual exposure and occupational (Martins, 2011). However, although the virus is transmitted by direct contact, percutaneous or through contaminated blood in a significant percentage of cases does not identify the route of infection, due to incomplete reports, making it difficult to identify the main risk factors for the population (FERREIRA, 2004).

The Information System for Notifiable Diseases (SINAN) was developed in the early 90s, with the objective of collecting and processing data on injuries reporting across the country, providing information for the analysis of the morbidity and contributing thus, for the decision-making at the local, state and federal (LAGUARDIA, 2004). However, the database notification of hepatitis C has shortcomings, such as underreporting that require caution in assessing the values found.

Given the above, the purpose of this study is to assess the epidemiological situation of hepatitis C in Brazil, based on data from SINAN.

MATERIALS AND METHODS

This is an observational, descriptive, using data from epidemiological and morbidity, the Secretariat of Health Surveillance, Ministry of Health, from the National Information System Diseases and Notification.

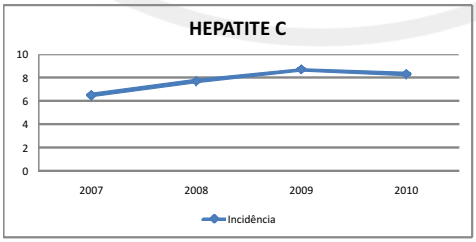
The data correspond to the cases reported in the period 2007-2010, which are collected in June 2011. The analysis began from the review of SINAN database using the following variables: year of diagnosis, age, sex, geographic region and source / mechanism of infection.

Initially we selected fields of the variables mentioned in the said period, through the TabWin. From these tests we proceeded to construct graphs and tables to assist in the discussion of results. These were compared with the current literature.

RESULTS AND DISCUSSION

Analyzing the incidence of hepatitis C, it was observed that in the years 2008 and 2009 there was an increase in the number of diagnosed cases, with an increment of 1.2 and 0.9 respectively, followed by a slight decrease in 2010 , which allows to infer a moderate endemicity of this disease in our country compared with other countries (Martins, 2011). Therefore, it is known that there is an underreporting by some health professionals because of the complexity and bureaucracy of the system, or even lack of preparation and interest of these professionals, so Hepatitis does not appear in statistics with its true magnitude.

According to a study by the Health Department of the Federal District, 77% of cases of hepatitis reported in the Management of Exceptional Drugs were not reported in SINAN, this report further states that the database system is inadequate for monitoring epidemiological situation of hepatitis C due to lack of consistent data (BRAZIL, 2010).



Graph 1. Incidence of Hepatitis C in the period 2007/2010 per 100,000 population

The difficulties encountered in the Information System Diseases and Notifications, and the problem of underreporting of HCV in Brazil, an epidemiological assessment difficult to make consistent, resulting in inaccurate and contradictory studies. For this reason, population-based studies that assess the incidence and prevalence of HCV in Brazil are scarce, comprising, in general, restricted geographical areas or specific populations, such as blood donors.

Transmission of Hepatitis C is caused primarily by parental exposure to blood and its derivatives. Some associated factors include: sexual exposure, prolonged hemodialysis, accidents with sharp objects in healthcare workers, transmission, and practices that involve contact with blood, such as acupuncture, tattooing and piercing, but has not completed studies indicate that these activities isolated as responsible for transmission (Ferrao, 2009).

Were studied as a source / mechanism of infection: injecting drug use, transmission, blood transfusion, occupational

accidents and sexual. In all sources of infection or mechanism predominated males over females (Figure 2). These data corroborate other studies3, 6. A survey conducted by the Project VigiVírus35 health services in public and private Brazilian revealed that 61% of patients were male (FERREIRA, 2004).

This increased positivity among men may be related to risk behaviors more often in this genre, such as drug use, multiple partners and exposure to unprotected sexual contacts (Ferrao, 2009).

The major route of transmission of hepatitis C cases reported in Brazil occurred by injecting drug use, as shown in Figure 2. This route was also considered as the main transmission of the disease in the United States, accounting for 60% of people infected with HCV in the past five years in this country (FERREIRA, 2004).

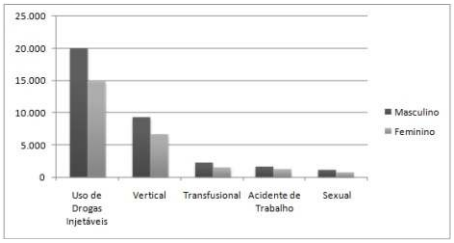


Chart 2. Source / mechanism of infection of Hepatitis C in Brazil according to sex

The intravenous drug use was a major form of transmission of HCV in ¬ loans last amended 40 years in countries such as Aus ¬ tralia, and is currently considered a major risk factor in developed countries. Such, its use accounts for about 70% to 80% of contamination in the last 30 years.

Table 1. Distribution of cases of hepatitis C in Brazil, according to the source / mechanism of infection and age

Age group	Source of Infection Mechanism					
	Sexual	transfusion	Injecting Drug Use	Vertical	Accident at Work	Total
< 1 ano	15	38	163	104	40	360
1 a 4	3	9	50	9	8	79
5 a 9	10	14	51	24	7	106
10 -14	11	14	92	44	24	185
15-19	54	39	343	139	75	650
20-39	512	782	9.883	4.590	1.031	16.798
40-59	997	2.194	18.754	8.661	1.487	32.093
60-64	140	364	2.538	1.087	132	4.261
65-69	87	206	1.561	686	68	2.608
70-79	65	168	1.225	663	50	2.171
80 e +	26	34	258	132	9	459
Em branco/Ign	-	4	20	6	6	36
Total	**1.920**	**3.866**	**34.938**	**16.145**	**2.937**	**59.806**

Vertical transmission appears as the second most common mechanism of infection in the transmission of hepatitis C in Brazil. Risk factors refer to the high viral load of the mother, to work alongside ¬ prolonged internal fetal monitoring and HIV-HCV coinfection, coinfected where mothers have 3.8 times more likely to transmit the virus to the child. With respect to breastfeeding, this does not seem to contribute significantly to the transmission of HCV (Martins, 2011).

A less common route of transmission was observed in SINAN sexual violence. The risk of HCV transmission related to this pathway is not fully understood, this risk factor is one of the most controversial in the epidemiology of hepatitis C by the divergent results observed in different studies (Martins, 2011).

In Brazil, since 1993, became mandatory serological tests (anti-HCV) in blood donor candidates (Strauss, 2001). Thus, after the reduction in HCV transmission by transfusion of blood products, sharing of material con minated area by injecting drug users has become the biggest risk factor for transmitting hepatitis C (Martins, 2011). This statement can be found in Table 2, where number of cases by injecting drug use in the age group 20 to 39 years is about 12.7 times higher when compared with the infection through blood transfusion for the same age group. A fact which can not fail to be mentioned, refers to the number of cases (n = 163) for injecting drug use in children under one year (Table 1), which is extremely unfounded the relationship between the mechanism of infection and the range of age.

Observing the work accidents as a source of infection, we could see an inconsistency in the data with respect to age <1, since this, 40 cases were reported. It is understood that this data is possibly the result of a flaw in the classification or even typing by professionals.

Even with regard to accidents at work, it was observed that the age group 20 to 39 years, followed by 40 to 59 years had the highest number of cases. The manipulation of materials contaminated with blood or secretions is inherent to health professionals, however, they often manipulate materials improperly, increasing the risk of accidents (CIORLIA, 2007). Thus, occupational exposure per ¬ has remained a potential risk factor for HCV infection, especially given the lack of effective policies profile ¬ effective post-exposure in this context (Martins, 2004).

Surveillance of cases of hepatitis C can clarify disease characteristics, risk factors, additional sources of infection, which allows the definition of the distribution patterns of the same (VIEIRA, 2010). It is unlikely that surveillance of hepatitis C may be performed at the national level, because although improved reporting of anti-HCV positive cases, not enough resources to clarify the complex situation that requires investigation (FERREIRA, 2004).

Table 2. Distribution of cases of hepatitis C in Brazil according to geographic region and source / mechanism of infection

Geographic Region	Source of Infection Mechanism					
	Sexual	transfusion	Injecting Drug Use	Vertical	Accident at Work	Total
North	1.920	-	-	-	-	1.920
Northeast	-	3.866	-	-	-	3.866
South	-	-	-	16.145	-	16.145
Southeast	-	-	34.938	-	-	34.938
Midwest	-	-	-	-	2.937	2.937
Total	**1.920**	**3.866**	**34.938**	**16.145**	**2.937**	**59.806**

In Table 2, it is possible to identify that each region had a source / unique mechanism of infection. However, such data are inconsistent possibly, since, despite regional differences in our country, all the inhabitants are exposed to all the cited

sources of infection, even if unevenly.

CONCLUSION

The practice of reporting of diseases is a fundamental attitude to improving the delivery of health care. Based on the difficulties associated with underreporting of cases or inadequacies in completing the questionnaire, highlights the need to develop actions in pursuit of continuing education to train professionals in completing accurate and complete form of mandatory reporting, as well as in the information system, enabling better planning of health actions in Brazil.

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EPIDEMIOLOGICAL ASSESSMENT OF CASES OF HEPATITIS C BASED ON SINAN

Among the endemic-epidemic diseases, which are major public health problems in Brazil set to hepatitis C. The objective is to assess the epidemiological situation of hepatitis C in Brazil, based on data from the National Disease Information and Notification (SINAN). This is a descriptive study, using data from epidemiological and morbidity in the SINAN period from 2007 to 2010. Based on the results, we observed an increase in the number of diagnosed cases of hepatitis C in 2008 and 2009, followed by a slight decline in 2010. The main source / mechanism of virus infection occurred through intravenous drug use, and the male responsible for the greatest number of cases in all forms of transmission. Regarding age, the age group most affected was 40 to 59 years and the Southeast region with the highest number of reported cases. Yet inconsistencies in the data were observed with respect to age in children under one year and the source / mechanism of infection due to occupational accidents and injecting drug use, and inconsistent data regarding the source / mechanism of infection reported by region of the country. It is concluded that the practice of notification of diseases is a fundamental attitude for improving the delivery of health care, highlighting the need to develop actions in pursuit of continuing education to empower professionals to fill full and correct statement of the mandatory notification as well as information system, enabling better planning of health actions in Brazil.

KEY-WORDS: Epidemiology. Hepatitis C. Information Siystems.

L'EVALUATION EPIDEMIOLOGIQUE DES CAS D'HEPATITE C BASÉ SUR SINAN

Parmi les maladies endémiques et épidémiques, qui représentent d'importants problèmes de santé publique au Brésil mis à l'hépatite C. Le but de cette étude est d'évaluer la situation épidémiologique de l'hépatite C au Brésil, basée sur les données de l'information nationale et des maladies transmissibles au Notification (SINAN). C'est une observation, descriptifs, données à l'aide du SINAN épidémiologiques et la morbidité de la période de 2007 à 2010. Basé sur les résultats, nous avons observé une augmentation du nombre de cas diagnostiqués d'hépatite C en 2008 et 2009, suivie par une légère baisse en 2010. La principale source / mécanisme d'infection par le virus a eu lieu par usage de drogues injectables, et les responsables de sexe masculin pour le plus grand nombre de cas dans toutes les formes de transmission. En ce qui concerne l'âge du groupe d'âge les plus touchées était de 40 à 59 ans et dans la région du Sud-Est avec le plus grand nombre de cas signalés. Cependant, il y avait des incohérences dans les données observées à l'égard de l'âge des enfants de moins d'un an et la source / le mécanisme de l'infection par les accidents de travail et l'utilisation de drogues injectables ainsi que des données contradictoires concernant la source / le mécanisme d'infection rapportés par région du pays. Il est conclu que la pratique de notification des maladies est une attitude fondamentale à l'amélioration de la prestation des soins de santé, soulignant la nécessité de développer des actions dans la poursuite de la formation continue pour habiliter les professionnels à remplir formulaire de notification correcte et complète de la scolarité obligatoire ainsi que le système d'information, permettant une meilleure planification des actions de santé au Brésil.

MOTS-CLÉS: épidémiologie. L'hépatite C. Systèmes d'Information.

EVALUACIÓN EPIDEMIOLÓGICA DE LOS CASOS DE HEPATITIS C BASADO EN SINAN

Entre las enfermedades endémicas y epidémicas, que representan importantes problemas de salud pública en Brasil conjunto de la hepatitis C. El objetivo de este estudio es evaluar la situación epidemiológica de la hepatitis C en Brasil, sobre la base de datos de la Información Nacional de Enfermedades Transmisibles y de Notificación (SINAN). Este es un estudio observacional, descriptivo de datos, utilizando de SINAN epidemiológica y la morbilidad entre 2007 y 2010. Basándose en los resultados, se observó un aumento en el número de casos diagnosticados de hepatitis C en 2008 y 2009, seguido de un ligero descenso en 2010. La principal fuente / mecanismo de la infección por el virus producido por el consumo de drogas, y el

responsable de macho para el mayor número de casos en todas las formas de transmisión. Con respecto a la edad del grupo de edad más afectado fue de 40 a 59 años y en la región Sureste con el mayor número de casos reportados. Sin embargo, hubo inconsistencias en los datos observados con respecto a la edad en niños menores de un año y la fuente / mecanismo de la infección por accidentes de trabajo y uso de drogas inyectables, así como datos inconsistentes respecto a la fuente / mecanismo de infección reportados por región del país. Se concluye que la práctica de la notificación de las enfermedades es una actitud fundamental para mejorar la prestación de asistencia sanitaria, destacando la necesidad de desarrollar acciones en pos de la educación continua para capacitar a los profesionales para llenar formulario de notificación correcta y completa de obligatoria así como la información del sistema, permitiendo una mejor planificación de las acciones de salud en Brasil.

PALABRAS CLAVE: Epidemiología. La hepatitis C. Sistemas de Información.

AVALIAÇÃO EPIDEMIOLÓGICA DOS CASOS DE HEPATITE C COM BASE NO SINAN

Entre as doenças endêmico-epidêmicas, que representam importantes problemas de saúde pública no Brasil configura-se a hepatite C. O objetivo do estudo consiste em avaliar a situação epidemiológica da Hepatite C no Brasil, com base nos dados do Sistema de Informação Nacional de Agravos e Notificações (SINAN). Trata-se de um estudo observacional, descritivo, utilizando os dados dos indicadores epidemiológicos e de morbidade do SINAN no período de 2007 a 2010. Com base nos resultados, observou-se um acréscimo no numero de casos diagnosticados de hepatite C no ano de 2008 e 2009, seguido de uma discreta diminuição no ano de 2010. A principal fonte/mecanismo de infecção do vírus ocorreu pelo uso de drogas injetáveis, sendo o sexo masculino o responsável pelo maior número de casos em todas as formas de transmissão. Com relação à idade a faixa etária mais atingida foi de 40 a 59 anos e o Sudeste a região com maior número de casos notificados. No entanto foram observadas incoerências nos dados com relação à faixa etária em menores de um ano e a fonte/mecanismo de infecção por acidentes de trabalho e uso de drogas injetáveis, bem como inconsistência nos dados no que se refere a fonte/mecanismo de infecção notificada por região do país. Conclui-se que a prática da notificação de doenças constitui uma atitude fundamental para melhoria da prestação da assistência em saúde, evidenciando a necessidade de desenvolver ações de educação permanente na busca de capacitar os profissionais da área no preenchimento correto e completo da ficha de notificação compulsória, bem como no sistema de informação, possibilitando um melhor planejamento das ações em saúde no Brasil.

DESCRITORES: Epidemiologia. Hepatite C. Sistemas de Informação.