

# Risk factors for hepatitis B and C among healthy population: a community-based survey from four districts of Southern Italy

Riccardo Serraino<sup>1</sup>, Maria Mazzitelli<sup>1</sup>, Giuseppe Greco<sup>1</sup>, Francesca Serapide<sup>1</sup>, Vincenzo Scaglione<sup>1</sup>, Nadia Marascio<sup>2</sup>, Enrico Maria Treçarichi<sup>1</sup>, Carlo Torti<sup>1</sup>

<sup>1</sup>Department of Medical and Surgical Sciences, Infectious and Tropical Diseases Unit, "Magna Graecia" University, Catanzaro, Italy;

<sup>2</sup>Department of Health Sciences, Clinical Microbiology Unit, "Magna Graecia" University, Catanzaro, Italy

## SUMMARY

In Southern Italy, viral hepatitis B and C still represent an important public health problem, with a serious social impact, and significant economic consequences. The objective of our community-based study was to assess the prevalence of risk factors and access to the test for viral hepatitis to get information for guiding prevention and screening strategies in our setting. The study was conducted among population of four selected districts in Southern Italy during May 2019. An anonymous structured questionnaire consisting of multiple-choice questions was administered by trained research assistants in order to assess any possible risk factor for HCV or HBV acquisition, and if any screening was previously performed. Six-hundred participants were included: 367 (61.2%) were females, with a mean age of 51 years (standard deviation, SD: 18 years). The three most frequent risk factors were: dental treatments in 425/600=70.8% (of whom 76/425=17.8%

were previously tested), unprotected sexual intercourse in 340/600=56.6% (of whom 54/340=15.8% were previously tested), and injections with glass syringes in 162/600=27% (of whom 32/162=19.7% were previously tested). Only 47/502 (9.3%) patients who were never been tested, did not report any risk factors for HCV or HBV acquisition, while 433 (86.2%) reported at least one risk factor, 293 (58.3%) at least two, 97 (19.3%) at least three, 16 (3.1%) at least four, and 2 reported to have at least five risk factors for HBV/HCV acquisition.

Our study shows that access to the HBV and HCV tests by the general population in these four selected districts is very limited (only 16.3 % of the participants underwent a screening test), especially in people with risk factors.

*Keywords:* HBV, HCV, risk factors, screening test.

## INTRODUCTION

Viral hepatitis, such as those due to hepatitis B virus (HBV) and hepatitis C virus (HCV), represent a serious public health problem worldwide. In the past few years, about 257 million people were estimated to live with chronic HBV

infection and about 887,000 died for its complications [1]. Prevalence of HBsAg carriers varies among regions, ranging from 0.1% to 2% in the United States and Western Europe, from 2% to 8% in Mediterranean Countries and Japan, and from 8% to 20% in South-eastern Asia and Sub-Saharan Africa [2]. Similarly, for HCV the most affected regions are the Eastern Mediterranean Regions and the Europe, with an estimated prevalence of 2.3% and 1.3%, respectively [3].

Nowadays directly acting antivirals (DAAs) therapy revolutionised the perspective of care

*Corresponding author*

Maria Mazzitelli

E-mail: m.mazzitelli88@gmail.com

for HCV chronic infection, hopefully leading to elimination and eradication of HCV in different settings, provided that screening and diagnosis of the affected population are effectively improved [4]. By contrast, an eradicating treatment for HBV infection does not exist, although drugs currently used for HBV control effectively viral replication, leading to improvement of liver fibrosis, and benefit to patient survival and quality of life [5]. Unfortunately, the majority of people are unaware of their viral hepatitis infection status, and therefore often present with advanced disease. Currently, it is estimated that a huge proportion of people with chronic viral hepatitis is still undiagnosed, by actual size of the phenomenon is not known, especially in settings where prevalence of infections may be higher [6]. Moreover, despite the importance of informative campaigns to promote population-screening programs, there are no data on level of the risk perception. Therefore, the goal of our study was to assess the awareness of the population relative to the risk factors for acquisition of hepatitis infections. The final objective was to get information useful for guiding prevention and screening strategies in our setting.

## ■ PATIENTS AND METHODS

A community-based study, nested of another study, was conducted among population of four selected districts in Southern Italy: Pianopoli (resident population N=2613), Tiriolo (N=3820), Serrastretta (N=3082) and Guardavalle (N=4463) [7]. The study was conducted in accordance with Declaration of Helsinki and principles of good clinical practice. Participant signed informed consent. Confidentiality of identity was guaranteed to all the participants. Communities were informed about the study objectives using printed material (leaflets, posters) displayed in public locations and distributed in cooperation with public health and civil authorities and general practitioners based in the target sites. Public broadcasts were made through local television networks, and press releases were also issued before the start of the screening activities at each site. An anonymous structured questionnaire consisting of multiple-choice questions was administered by trained research assistants in order to assess any possible risk factor for HCV or HBV ac-

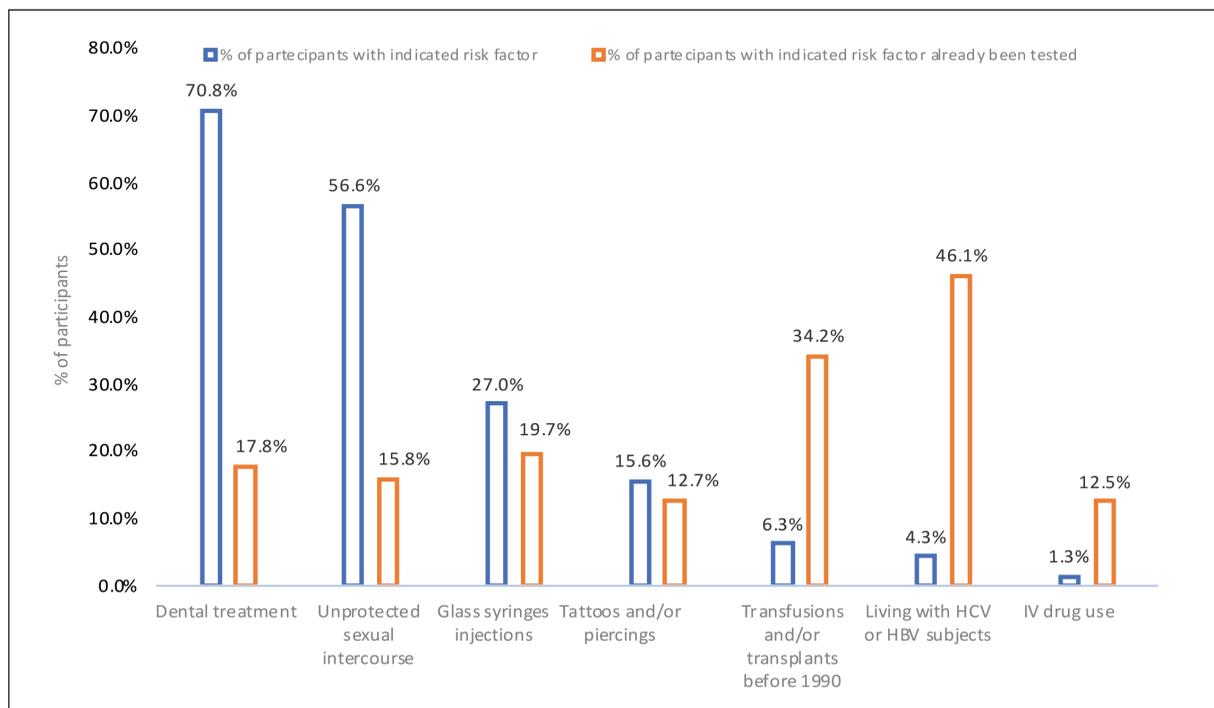


Figure 1 - Total of participants (n=600) interviewed with risk factors for hepatitis.

quisition, and if any screening was performed. After the interview, information leaflets on risk factors for hepatitis were distributed.

## ■ RESULTS

During May 2019, 600 subjects accepted to participate to the survey, 367 (61.2%) were females, with a mean age of 51 years (standard deviation, SD: 18 years). Only 98 participants (16.3%) had undergone a screening test for hepatitis B or C previously, 24 of them resulted positive (24.5%). Figure 1 depicts the percentage of people interviewed who displayed risk factors and percentages of those who were tested among those who had a certain risk factor. Among 600 participants, the three most frequent risk factors were: dental treatments in 425/600=70.8% (of whom 76/425=17.8% had been previously tested), unprotected sexual intercourses in 340/600=56.6% (of whom 54/340=15.8% had been previously tested), and injections with glass syringes in 162/600=27% (of whom 32/162=19.7% had been previously tested). Only 47/502 (9.3%) patients who were never been tested, did not report any risk factors for HCV or HBV acquisition, while 433 (86.2%) reported at least one risk factor, 293 (58.3%) at least two, 97 (19.3%) at least three, 16 (3.1%) at least four, and 2 reported to have at least five risk factors for HBV/HCV acquisition. Frequency of individual risk factors in these 502 participants is shown in Table 1.

**Table 1 - Prevalence of HBV and HCV risk factors (N=502).**

Risk factors	N	%
Dental treatment	349	69.50%
Unprotected sexual intercourse	286	56.97%
Glass syringes injections	130	25.89%
Tattoos and/or piercings	82	16.30%
Transfusions and/or transplants before 1990	25	4.98%
Living with HCV or HBV subjects	14	2.70%
IV drug use	7	1.40%

For each risk factor, the first column (the blue one) represents the percentage of participants (N=600) who had the indicated risk factor. The second column (the orange one) represents the percentage of those who had been tested among participants who had the indicated risk factor (n=76 for dental treatment, 54 for unprotected sexual intercourse, 32 for glasses syringe injections, 12 for tattoos and/or piercings, 13 for transfusions or transplants, 12 for those living with people with chronic HCV patients or HBsAg carriers, 1 for intravenous drug use).

## ■ DISCUSSION

The studied population had a wide range of age and a significant proportion of females, mostly coming from rural areas, because, in line with the objective of the main study, target sites were selected on the basis of the ratio between the number of sheep registered in the municipality and the population [7]. In context like this, previous epidemiological studies demonstrated that prevalence of viral hepatitis (HCV) was high, especially among elderly people because of injections with glass syringes, for whom vaccination against HBV was not performed [8]. Therefore, our results may not necessarily be generalized to metropolitan areas. Although the most frequent risk factor was represented by dental treatment, we do not know whether this represents an actual risk factor because, in the most recent years dentists implemented a more careful approach. The second most frequent risk factor was unprotected intercourses, but we did not better characterize this risk factor. By contrast, the use of glass syringes (the third most frequent risk factor) is a more certain risk in elderly populations, of which only 19.7% have been tested. Importantly, a high percentage of patients who have never been tested (86.2%) disclosed at least one risk factor.

In conclusion, our results demonstrated that access to the screening test for HBV and HCV by the general population is very limited even in people who displayed more than one risk factors for HBV and HCV acquisition. Therefore, these results strongly indicate the importance of information campaigns and screening programs.

### Funding

This study did not receive any funding from public or private agency.

### Conflict of interest

All the authors declare to have not conflict of interests in the publication of this paper.

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