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Atti

2° edizione

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e delle esperienze professionali dei giovani

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2° EDIZIONE "GIORNATE DELLA RICERCA SCIENTIFICA E DELLE ESPERIENZE PROFESSIONALI DEI GIOVANI"

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soggetti sani o malati di tutte le età. Sono stati esclusi articoli che hanno utilizzano tecniche in vitro, che hanno esplorato la relazione tra lattoferrina e batteri, funghi o parassiti. Per ogni studio considerato eleggibile, due revisori hanno estratto in modo indipendente le seguenti informazioni: primo autore, anno di pubblicazione, paese, famiglia di virus, scopo dello studio, caratteristiche della popolazione target, disegno dello studio, tipo e durata dell'intervento, risultati principali.

Risultati

Dopo la rimozione dei duplicati, 1.130 records sono stati screenati per titolo e abstract. Di questi, 166 full text sono stati valutati e 14 articoli (12 trial clinici e 2 studi di coorte) sono stati infine inclusi nella revisione sistematica. Le evidenze disponibili sono state raggruppate sulla base della famiglia virale in *Flaviviridae, Retroviridae, Reoviridae, Caliciviridae, Coronaviridae*. Si è evidenziata una considerevole eterogeneità nei metodi di reclutamento dei partecipanti e di conduzione degli studi; per quanto riguarda i *Flavivirus,* si trattava sempre di pazienti adulti con infezione da HCV nei quali la carica virale è significativamente diminuita dopo la somministrazione di lattoferrina. Due studi sui retrovirus riguardavano la popolazione pediatrica, rivelando rispettivamente una diminuzione della carica virale, un aumento dei CD4, un incremento di linfociti T e della interluchina 12. Lo studio sulla popolazione adulta con infezione da HIV ha valutato la risposta immunologica, ma senza dare risultati significativi. Dei due studi condotti sui *Reovirus*, entrambi considerando bambini sani, solo uno ha evidenziato l'influenza positiva della lattoferrina sulla severità della sintomatologia clinica, senza tuttavia migliorare significativamente l'incidenza di queste infezioni virali, così come hanno riportato nello studio condotto sui *Calicivirus*. Infine, lo studio sui *Coronavirus* ha riportato esiti positivi per quanto riguarda il miglioramento della sintomatologia clinica in seguito a somministrazione di lattoferrina.

Conclusioni

I risultati preliminari di questa revisione sistematica hanno evidenziato la necessità di approfondire il ruolo della lattoferrina sulle infezioni sostenute da virus, sia sotto l'aspetto preventivo che nelle infezioni in fase attiva. In particolare, ci sono prove convincenti sulla diminuzione della carica virale nei pazienti con infezione da HCV e HIV, ma bisogna indagare meglio l'efficacia preventiva della lattoferrina sia sui bambini che sugli adulti.

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Seroprevalence of anti-SARS-CoV-2 antibodies after the first COVID-19 wave: a cross-sectional study in the province of Modena, city of a Northern Italy region

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Introduction

The spread of the COVID-19 outbreak, due to infection with the coronavirus SARS-CoV-2, occurred all around the world in the spring of 2020, with extremely severe consequences in terms of hospitalizations and deaths [1]. In Italy the epidemic was first recognized on 21 February 2020 [2]. There was a first wave that mainly affected Northern Italy [3], with a rapid rise in the number of cases and a peak on 21 March, followed by a decline and stabilization of cases in June and July. Italy is currently witnessing a second wave of the outbreak throughout its entire territory [4]. In the present study, we investigated serum anti-SARS-CoV-2 antibody prevalence between 1 June and 25 September 2020 in 7,561 subjects in Modena, Northern Italy.

Materials and methods

We investigated 5,454 workers, who participated to testing campaign offered by their companies, and 2,107 residents who independently decided to undergo the examination at the Test Laboratory in Modena. Upon approval by the local Ethics Committee, we analyzed the results of this analytical campaign, and specifically of serological tests to detect serum anti-SARS-CoV-2 antibody in the subjects tested from 1 June to 25 September 2020. We considered both quantitative and qualitative tests carried out on these samples. We computed absolute and relative prevalence of serum antibodies against SARS-CoV-2 in the whole study population and in selected subgroups. To consider the subjects based on the professional activity to which they belong, we used the categories in the 2007 ATECO classification of economic activity [5].

Results

The overall seroprevalence was 4.7%, higher in females (5.4%) than in males (4.3%), and in the oldest age groups (7.3% between 60 and 69 years, and 11.8% ≥ 70 years). Furthermore, seroprevalence proved higher in subjects tested with the quantitative test (5.8%) compared to the rapid qualitative one (2%). Among the occupational categories, we found the highest seroprevalence in healthcare workers (8.8%), dealers and vehicle repairers (5.2%) and workers in the sports sector (4.0%). Seroprevalence was lower for office workers (3.3%), people working in water supply and waste management sector (2.4%) and manifacturers (2.0%),

and even lower or null for those employed in sectors such as transport and storage, accommodation and restaurant services, and the school system.

CONCLUSIONS

The higher seroprevalence in females may indicate a greater susceptibility to infection, a lower COVID-19 lethality compared to males, or an effect of the familial, social and occupational roles of women, leading to an increased risk of contracting the virus. The steep increase in seroprevalence in the older age groups, together with the higher mortality affecting them, is of paramount relevance for the evaluation of specific protection policies for these subjects at high risk. Considering occupational risk factors, and not unexpectedly, seroprevalence was higher in healthcare workers, most exposed to SARS-CoV-2 infection, followed by dealers, vehicle repairers and sportsmen. The results in healthcare operators are in agreement with data previously observed in other studies [8-10] and may underline the high risk of infection experienced by this crucial sector and the need to increase their protective measures for these workers. We found that workers heavily involved in routine contacts with different people (clients, patients, sports opponents) had a higher seroprevalence of anti-SARS-CoV-2 antibodies. On the other hand, no excess seropositivity emerged for office workers having no contact with the public as expected, for manufacturing and construction workers, and for employees in transportation and storage. This indicates that, so far, these sectors have enforced adequate physical distancing and use of personal protective equipment to mitigate the risk of SARS-CoV-2 infection. The absence of increased risk for workers in the education sector was probably strongly favored by the limited mobility and smart working of employees during the national lockdown [11]. Interestingly, the subgroup "production of meat products" did not show any positivity to the serological test, contrary to what expected given the occurrence of small outbreaks in slaughterhouses in other regions [12,13]. In conclusion, we have assessed in detail the seroprevalence of anti-SARS-CoV-2 antibodies in an Italian area severely hit by the first wave of Covid-19, the Emilia-Romagna region. This will also allow to estimate Covid-19 infection fatality ratio, since so far the only estimate available in this area has been case-fatality ratio [14].

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Infezione da HIV e prevenzione secondaria: risultati preliminari di un'indagine condotta negli studenti universitari

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INTRODUZIONE

In Europa e nel mondo, sono stati messi a punto programmi per aumentare l'adesione ai test di diagnosi precoce dell'infezione sostenuta dal virus dell'immunodeficienza umana (HIV), così da ridurre il numero di infezioni non diagnosticate o diagnosticate tardivamente [1]. La diagnosi precoce dell'infezione da HIV porterebbe, infatti, a sostanziali benefici individuali e di sanità pubblica [2,3], rendendo più efficace la terapia antiretrovirale e offrendo un'aspettativa di vita paragonabile a quella della popolazione generale. L'incidenza più alta di nuove diagnosi di HIV in Italia si riscontra nella fascia di età 25-29 anni (10,4/100.000) [4]. Obiettivo primario del presente studio è stato, pertanto, valutare le conoscenze degli studenti universitari.