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Research Article

Approach to self-medication for COVID-19 by the family and community physician

Abordagem da automedicação contra COVID-19 pelo Médico de Família e Comunidade

Enfoque de la automedicación contra COVID-19 por el Médico de Familia y Comunidad

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Abstract

Introduction: Self-medication for COVID-19 is considered an emerging problem, and it reflects an *infodemic* and growth of the disease in Brazil. Accordingly, primary health care (PHC), where most of the access of mild and moderate cases of COVID-19 occurs, has been shown to be a special place for approaching patients using these drugs irrationally. **Objective:** To discuss questions about self-medication for COVID-19, addressing particularities of the work of the family and community physician and the perspectives for these professionals in a scenario of great political-health tensions. **Methods:** This was a theoretical study based on the premises of the rational use of medicines (RUM) and evidence-based medicine to put forward a proposal for the performance of family physicians in the light of the main documents and regulations produced on the treatment of COVID-19 in the country. **Results:** Through the theoretical framework, two main strategies were presented for addressing cases of self-medication for COVID-19: one from an individual point of view, which involves the prescription of these drugs through an understanding agreed between the family physician and the patient; and one of a systemic nature, linked to the fight against the illegal sale of medicines for treating COVID-19 in the area where this professional works. **Conclusions:** Political disputes over the pandemic still go on and should persist for a long time in Brazil. It is up to health professionals and society as a whole to defend RUM and combat the use of unnecessary, ineffective, unsafe or potentially inappropriate medicines in the treatment of COVID-19, thus safe-guarding life and good use of the population's resources.

Keywords: Self-medication. Coronavirus infections. Primary health care. Family practice.

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Resumo

Introdução: A automedicação para COVID-19 é considerada um problema emergente e que reflete o momento de *infodemia* e de crescimento da doença no Brasil. Nesse sentido, a Atenção Primária à Saúde, em que ocorre a maior parte do acesso dos casos leves e moderados de COVID-19, tem-se mostrado um lugar privilegiado para a abordagem de pacientes em uso irracional desses medicamentos. **Objetivo:** Discutir questões sobre a automedicação voltada para a COVID-19, abordando particularidades do processo de trabalho do médico de família e comunidade (MFC) e as perspectivas para esses profissionais num cenário de grandes tensões político-sanitárias. **Métodos:** Trata-se de um ensaio teórico que se baseia nas premissas do uso racional de medicamentos (URM) e da medicina baseada em evidências para sintetizar uma proposta de atuação de MFC à luz dos principais documentos e normativas produzidas sobre o tratamento da COVID-19 no país. **Resultados:** Por meio do referencial teórico, são apresentadas duas estratégias principais para a abordagem dos casos de automedicação para COVID-19: uma do ponto de vista individual, que envolve a desprescrição desses medicamentos mediante um entendimento acordado entre o MFC e o paciente; e uma de cunho sistêmico, ligada ao combate à venda irregular de medicamentos voltados para a COVID-19 no território de atuação desse profissional. **Conclusões:** As disputas políticas em torno da pandemia ainda continuam vivas e devem persistir por longa data no Brasil. Cabe aos profissionais de saúde e à sociedade como um todo defender o URM e combater a utilização de medicamentos desnecessários, inefetivos, inseguros ou potencialmente inadequados no contexto da COVID-19, protegendo assim a vida e o bom uso dos recursos da população.

Palavras-chave: Automedicação. Infecções por coronavírus. Atenção primária à saúde. Medicina de família e comunidade.

Resumen

Introducción: La automedicación para COVID-19 se considera un problema emergente y refleja el momento de la *infodemia* y el crecimiento de la enfermedad en Brasil. En este sentido, la Atención Primaria de Salud (APS), donde ocurre la mayor parte del acceso de casos leves y moderados de COVID-19, ha demostrado ser un lugar privilegiado para acercarse a pacientes en uso irracional de estos fármacos. **Objetivo:** Discutir cuestiones sobre automedicación dirigidas al COVID-19, abordando las particularidades del proceso de trabajo del médico de familia y comunidad (MFC) y las perspectivas de estos profesionales en un escenario de grandes tensiones político-sanitarias. **Métodos:** Se trata de un ensayo teórico que se basa en las premisas del uso racional de medicamentos (URM) y la medicina basada en evidencias (MBE) para sintetizar una propuesta para el desempeño de los MFC's a la luz de los principales documentos y normativas producidas em el tratamiento de COVID-19 en el país. **Resultados:** A través del marco teórico, se presentan dos estrategias principales para el abordaje de los casos de automedicación por COVID-19: una desde un punto de vista individual, que involucra la prescripción de estos fármacos a través de un entendimiento consensuado entre el MFC y el paciente; y una de carácter sistémico, vinculado a la lucha contra la venta irregular de medicamentos dirigidos al COVID-19 en el territorio donde trabaja este profesional. **Conclusiones:** Las disputas políticas sobre la pandemia aún están vivas y deberían persistir durante mucho tiempo en Brasil. Corresponde a los profesionales de la salud y a la sociedad en su conjunto defender la URM y combatir el uso de medicamentos innecesarios, ineficaces, inseguros o potencialmente inapropiados en el contexto del COVID-19, protegiendo así la vida y el buen uso de los recursos de la población.

Palabras clave: Automedicación. Infecciones por coronavirus. Atención primaria de salud. Medicina familiar y comunitaria.

INTRODUCTION

The pandemic of the new coronavirus (SARS-CoV-2), which causes COVID-19, has spread across the world and advanced in all Brazilian states, especially in the periods of June to August 2020 and March to June 2021. Until July 27, 2021, Brazil had already reached totals of 19,749,073 cases and 551,835 deaths due to the disease.[1] The relevant lethality, the ease of contagion and the lack of specific drugs against COVID-19 caused great apprehension in the Brazilian population, as well as exposing the fragility of health networks in states and municipalities, bringing to light important limitations in access to services.[2] Accordingly, fears and uncertainties intensified the habit of self-medication — use of medication without prescription, guidance or monitoring by the doctor or dentist, with either over-the-counter or illegal drugs.[3]

In the first half of 2020, there was great dissemination of fake news and preliminary information from scientific research on social networks and in the media about drugs already on the market that could have potential in the prevention and/or treatment of COVID-19.[4] Many of these drugs, promising in *in vitro* studies proved to be ineffective for the disease when submitted to clinical studies in humans.[5] However, the

visibility brought to such therapies aroused an unbridled search for drug sources never before seen in the country.[6] According to a study by the Federal Council of Pharmacy (CFF),[7] ivermectin sales in Brazil grew by 557% between 2019 and 2020, with more than 8 million boxes sold in June 2020 alone. The excessive demand for hydroxychloroquine led to shortages in numerous pharmacies, compromising the treatment of patients with rheumatic disease, and the illicit trade of azithromycin increased considerably, both in open markets and in small pharmacies, without the requirement for special prescriptions, or even in clandestine drugstores.[3,7] On the other hand, the imbalance in the supply/demand of these drugs resulted in a significant increase in prices, hindering the access of other users.[8]

To try to contain the explosion in sales of such drugs, the National Health Surveillance Agency (ANVISA) included in April 2020 chloroquine and hydroxychloroquine in the list of substances subject to the Special Control Revenue.[9] In addition, approval by the Federal Council of Medicine (CFM)[10] and by the Ministry of Health (MS)[11] of its prescription for cases of COVID-19 was conditioned to the user signing an informed consent form, which further restricted its sale. As a result, the purchase of medicines successively moved to dewormers, especially ivermectin, which is more accessible and cheaper.[3,7] In view of this movement, ANVISA started to require, as of July 2020, special prescriptions also for ivermectin and nitazoxanide, but ended up revoking the decision three months after its implementation.[12,13]

The controversy surrounding these drugs became even more emblematic during the collapse of the Manaus health system in January 2021, after which the minister of health and the president of Brazil attributed a good part of hospitalizations and deaths from COVID-19 to lack of “early treatment” in the city.[14] This talk was opposed by the coordinating physician of the intensive care unit of the Getúlio Vargas University Hospital (HUGV), who stated that the generalized self-medication of the population of Manaus did not prevent the worsening of cases, the overcrowding of the service and the increase in the number of deaths from the disease.[15] Other municipalities went further and began to institutionalize such practices in city halls, distributing “COVID-19 kits” (combinations of azithromycin, ivermectin and other substances) to the population, many times in powders and without medical supervision.[16] In a survey carried out with all ten Brazilian municipalities with more than 100,000 inhabitants that officially distributed these kits, nine of them recorded mortality rates for COVID-19 that were higher than the average for their respective states.[17]

In this sense, self-medication for COVID-19, in addition to not offering additional protection against the disease and presenting risks for drug interactions and adverse effects, generated a false sense of security and led many users to abandon hygienic measures and social distancing. [2,18]

In view of this scenario, the irrational use of medications in the context of COVID-19 became an emerging problem[3] and one that needed to be approached with caution, especially by primary health care (PHC), where most of the access of mild and moderate cases occurred.[19] Thus, this theoretical essay aimed to discuss issues related to the discontinuation of self-medication for COVID-19 and its territorial surveillance, addressing particularities of the work process of the family and community physician (FCP) and the perspectives for these professionals in a scenario of great political and health tensions.

METHODS

This work was based on the premises of the rational use of medicines (RUM)[20] and evidence-based medicine[21] to develop a proposal for the performance of FCP in light of the main documents and regulations

produced on the treatment of COVID-19 in the country — including publications by the Brazilian Societies of Family and Community Medicine (SBMFC), Infectious Diseases (SBI) and Pulmonology and Phthisiology (SBPT) and Brazilian Association of Intensive Medicine (AMIB) and Brazilian Medical Association (AMB) and CFM and MS.[10,11,22-25] RUM, understood as the administration of medications appropriate for clinical conditions, in doses and for adequate periods of time at the lowest possible cost for the patient/community,[19] has as one of its pillars EBM - the integrated use of the best evidence available in the literature with the clinical experience of the professional and the preferences of users.[20] In this theoretical effort, the lack of scientific proof of the effectiveness of drug therapies is recognized. (prophylactic, early or late) for COVID-19 to date, which requires a case-by-case assessment from professionals.[10,11,22-25] The absence of strong evidence (or the existence of only indirect and preliminary evidence low-level certainty),[26] in this way, prevents generalized recommendations from being made for certain drugs for the public, such as some sort of kit, and places self-medication for COVID-19 and the RUM at extremely opposite poles.[27] Finally, two documents[10,11] deal with the professional autonomy of physicians to prescribe or not these medications in cases of COVID-19, which confirms the description of ineffective treatments when decisions are shared with users.

Using these guidelines, two main strategies are presented to approach cases of self-medication for COVID-19: one from an individual point of view, which involves the deprescription[28] of such medications through an agreed understanding between the FCP and the patient; and one of a systemic nature, linked to combating the illegal sale of medicines[29] for COVID-19 in the area where this professional works.

The focus of this work will be the users who obtain (whether lawfully or not) and consume medications on their own for the specific treatment of COVID-19 - which include drugs such as chloroquine, hydroxychloroquine, azithromycin, ivermectin, nitazoxanide, dexamethasone and vitamin supplements and minerals.[3] The approach to prescriptions made by other professionals will not be included in this study, given the singularities of the professional-user encounter, which requires other theoretical references. In addition, the analysis of the symptomatic treatment of the disease will not be part of this work, such as the use of analgesics and antihistamines, provided for in the documents mentioned above and already used with extensive experience in cases of flu syndrome.[30]

Deprescribing drugs in irrational use for COVID-19

The deprescription of medications is a process with a scientific and ethical foundation that seeks to modify the dose of drugs or replace or eliminate those drugs that are not beneficial or are potentially harmful to a given patient.[28] In the context of the pandemic, it emerges as an important strategy in the approach to users self-medicating for COVID-19. PHC, through attributes such as access and longitudinality of care, has a privileged place in the conduct of deprescription plans, bringing greater security and effectiveness to its development.[31] Although the term deprescription has a semantic relationship with the prescriptive act performed by other professionals, in this work it will be used with the expanded sense of discontinuing use for self-medication, thus taking advantage of its theoretical framework and its applicability in the context of PHC.[28]

Users doing self-medication usually present themselves at PHC during the search of COVID-19 testing, for symptomatic care, for adverse drug effects or even occasional contact during home visits.[3] In these situations, it is important to address motivations such as fear of the disease, contamination of

close people, family pressure for the use of these drugs and, if possible, discussing the issue of infodemic — "excess quantity to the detriment of the quality of information about COVID-19".[32]

While deprescription involves the search for a better risk-benefit-cost ratio, it must also have as a principle the preferences, desires and expectations of patients.[28] The person-centered clinical method (PCCM), as an element of the scope of work of the FCP, points out ways that can facilitate the handling of these cases. More than a simple sequence, PCCM provides a methodological proposal that seeks to approximate the needs and expectations of professionals and users based on four components: *exploring health*, *disease and the experience of disease*; *understanding the person as a whole*; *developing a joint problem management plan*; and *strengthening the relationship between the person and the doctor*.[33] With a more adequate understanding of the patient's illness process, a more precise and resolute intervention on the problems presented becomes possible.

PCCM should also be used in opposition to the practice of professionals who have rejected or shown repulsion for users in self-medication for COVID-19. During the pandemic, the polarization between a supposed "scientific knowledge" held by health workers and a popular "ideological ignorance" that would be related to manipulation and fake news about the treatment of the disease became frequent.[2] This prevented dialogue with certain users who for various reasons sought refuge in drug treatment. In these cases, empathy and qualified listening are necessary not only to safely deprescribe drugs but also to implement measures to reduce harm.

For the development of deprescription, it is necessary to observe the context of treatment in view of possible drug interactions, whether with other therapies, or even between drugs, and adverse effects that may compromise other underlying pathologies, which may reinforce the need for the exclusion of drugs in question.[34]

- Drugs consumed in a single dose, seen more frequently in cases of ivermectin and nitazoxanide, will hardly be able to be contained in time by professionals, leaving only their post-administration monitoring. Despite the incipient studies on the treatment of COVID-19, cases of intoxication and severe liver disease due to overdose of ivermectin have been reported in Brazil.[5,34,35]
- Drugs with longer duration of use (prophylactically or post-exposure) can be deprescribed in a timely manner to reduce harm, especially when detected in the first days of consumption. In addition to the exposure time, the number of medications can be reduced to the maximum accepted by the user, excluding as a whole (deletion) or eliminating those with the greatest potential harm ("selective cut").[28] For example, a patient using a "COVID-19 kit" with six drugs can reduce most of the risks to their health by restricting consumption to only the vitamin supplement.[34] It is noteworthy that this change must be individualized, respecting personal choices and clinical correspondence.[28]

Deprescription can be associated with what we call "allowed delay", when assisted and non-interventionist observation of less urgent conditions is developed, offering, in case of need, easy access to their reference professional.[36] Since most patients with COVID-19 experience mild to moderate symptoms with spontaneous resolution of the infection, it is possible to offer a sober and expectant description using time as a working tool (both therapeutic and diagnostic clarification).[26,27] The delay permitted should not be confused with negligence or omission — on the contrary, it must be accompanied by the user's "attentive observation"[36] for a period of up to 14 days from the onset of symptoms, linking them to the service and keeping an eye on the main signs of risk.[22] In support of this process, it is worth highlighting the importance of detailed recording of information in medical records, using the Problem-Oriented Health Record as a

model, as a measure of patient safety, improving communication between professionals and strengthening longitudinal care.[37]

In addition to the usual clinical evolution, there are frequent cases of users self-medicating for COVID-19 who seek treatment of adverse drug effects, such as diarrhea after the use of azithromycin.[34] In these situations, there is an opportunity for dialogue about the potential risks of self-medication and the need for individualized assessment in the presence of more intense symptoms. Among the effects, bacterial resistance should be highlighted, which has been enhanced by the irrational use of azithromycin, which can compromise the treatment of diseases such as gonorrhea and bacterial pneumonia.[38]

Finally, given the tenacious position of a user regarding the desire to keep taking the drugs, guidelines on the risks of drugs must be reinforced, monitoring of the case must be maintained and facilitated access made available in case of worsening of the clinical condition.[22,34] The denial of deprescription should not, therefore, be an impediment to the care of these patients, making it even more necessary for professionals' attention and the strengthening of dialogue channels with the people..

Identifying and combating the illegal trade in medicines for COVID-19

In addition to the individual clinical aspects, the area in which the FCP operates is imperative for their work process when we talk about outbreaks of self-medication. Theoretically, the health responsibility for the ascribed area is present both in the guidelines of the Unified Health System (SUS) operationalized by the PHC (territorialization/assignment of clientele)[39] and in the principles of family and community medicine (action influenced by community/resource of a particular population).[40] In this sense, identifying establishments that are illegally selling medicines targeted at COVID-19 can help to combat their irrational use.

The fraudulent sale of drugs is a practice of serious legal and criminal responsibility, but it is chronic and widespread in the country. Included in this category are acts of smuggling (clandestine importation and embezzlement), sale of stolen cargo, sale of controlled-use medications without the presence of a special prescription, and trade in counterfeit or adulterated drugs (with reduction, exclusion or substitution of active ingredients).[41] In outbreak periods, such as the COVID-19 pandemic, it is expected that the increase in demand and the limited production capacity of certain drugs in the country will result in an increase in illegal trade.

In Brazil, municipal and state health surveillance agencies and ANVISA, working together, are responsible for regulating and inspecting products that require health control, whether in the physical inspection of establishments or in the virtual domains of national action. While ANVISA is responsible for the federative coordination of the system, it is up to state and municipal surveillance authorities to perform local inspections, prepare notices of sanitary infractions, interdictions and seizures of products, among others. This institutional arrangement, which makes up the so-called National Health Surveillance System (SNVS), governs safe access to medicines available in the country — with good quality and effectiveness and absence of chemical, biological or physical contaminants.[42]

However, weaknesses in the health surveillance decentralization process, such as underfunding and the incipience of the municipal component of the SNVS, have impacted the overall performance of this sector and reduced its link to the SUS.[43] In addition to these aspects, the country's extensive size and the meticulous and widespread performance of these crimes has hampered the supervision of the SNVS, a situation that becomes even more complex in a scenario such as the pandemic. As a result, the

circulation of "unsafe drugs"[44] increases, which can cause irreversible harm to health and even the death of users. The suppression of the illegal drug trade, therefore, seeks not only to reduce the indiscriminate use of certain substances, but also to combat the consumption of unsafe drugs in the country, avoiding the overlapping of risks to patients.[3] For example, a user with mild symptoms of COVID-19, pressured by family members to self-medicate with azithromycin, may end up purchasing an adulterated, contaminated and contraband drug at an illegal pharmacy, aggravating their clinical condition beyond the existing risks of the original drug. Accordingly, the role of PHC professionals is even more significant due to their territorial distribution and proximity to the population.[39]

After recognizing a case of self-medication and defining deprescription strategies, it is important to question the place of purchase of the medication, especially in situations that would require the presence of a special prescription. This information is rarely made available by the user, who fears reprisals both from the place of service and from the pharmacy or supplier of origin. Therefore, dialogue is essential to reassure them about the absence of retaliation by the service and the offer of confidentiality to the patient. As pointed out earlier, there are multiple reasons for using these drugs and their approach in the PHC can be facilitated the greater the link with the reference team is shown.

Drugs such as dexamethasone, ivermectin, AAS and nitazoxanide are sold over-the-counter, which makes their sale easier in pharmacies and drugstores throughout the country.[3] In these cases, it is difficult to distinguish situations in which fraudulent or even employee-induced sales occur. However, it is possible to improve PHC communication with pharmacists in establishments in the ascribed area to strengthen pharmacovigilance related to these drugs, especially on issues such as overdose, drug interactions and adverse effects.[45]

Controlled drugs such as hydroxychloroquine and azithromycin present an even more delicate situation, being obtained in these cases through commercial fraud.[3] This highlights the importance of dialogue with the local population, informing them about the risks of purchasing unsafe medicines, and to try, whenever possible, to locate the establishments where they were purchased. There are three spheres[29] for reporting pharmacies with illegal sales of controlled drugs that can be used by health professionals:

1. Health surveillance agencies: municipal, state and ANVISA entities (for example: ANVISA call center — 0800 642 9782; São Paulo Health Surveillance Center electronic portal — www.cvs.saude.sp.gov.br/ouvidoria.asp);
2. Regional pharmacy councils (for example, e-mail complaints to the Regional Pharmacy Council of Rio de Janeiro — denuncia.fiscalizacao@crf-rj.org.br);
3. State Public Prosecutor's Office, especially prosecutors related to the health sector (for example, Public Prosecutor's Office for the Defense of Health of the Federal District and Territories— (61) 3343-9472/3343-9440).

In addition to these agencies, the local press can be of great help in denouncing illegal pharmacies and the street commerce of controlled medicines, such as open markets.[46] Keeping in touch with newspapers and news channels in the region can be a good strategy to increase the inspection of these establishments and commercial points and to curb, even temporarily, this type of practice.

In short, with these actions, PHC professionals can contribute to the global work of health surveillance, both in identifying patterns of use in self-medication among users and its distribution in the assisted area, as well as in monitoring cases and their clinical repercussions. thus valuing the knowledge of the area and collaborating with the work of different segments beyond the sphere of health.

CONCLUSIONS

Self-medication for COVID-19 is considered an emerging problem[3] and reflects the moment of infodemic and the growth of the disease in Brazil. Despite the progress in the discussion with the public, especially with the support of scientific institutions, the illegal sale of these drugs remains active and widespread throughout the country.

Accordingly, the PHC is seen as a privileged place to approach such cases, both in the individual aspect of conduct and in the surveillance of the area. The FCP, with the tools of their scope of work, appears to be a valuable professional for conducting deprescription, harm reduction and surveillance processes in the face of the indiscriminate use of these drugs. However, it is necessary to combat the repulsion for such patients shown by some professionals, respecting individual reasons and always trying to improve the dialogue with the people. In addition, identifying and reporting illegal points of sale of these drugs, especially those for controlled sales, in the area of professional activity is essential to reduce the circulation of unsafe drugs among users.

On the other hand, the intensification of the debate on vaccines and the beginning of the national immunization program against COVID-19 have shown the importance of valuing science in the fight against the pandemic — a situation that opposes the irrational use of medicines. The speech of ANVISA directors, during the emergency approval of two vaccines against COVID-19 in Brazil, about the "absence of therapeutic alternatives" for the disease had national repercussions and prompted even more incisive questions about the "early treatment" advocated by the MS.[47] Days after the event, the then minister of health publicly recanted, stating that he had not encouraged early treatment, but rather "early care" for respiratory symptoms, opposing the advertising of any specific drug for COVID-19. On the other hand, President Jair Bolsonaro maintained the defense of this therapy, encouraging his followers not to give up on early treatment.[14]

Therefore, it is clear that the political disputes surrounding the pandemic are still alive and should persist for a long time in Brazil. It is up to health professionals and society as a whole to defend RUM and fight the use of unnecessary, ineffective, unsafe or potentially inappropriate medications in the treatment of COVID-19, thus protecting lives and good use of the population's resources.

CONFLICTS OF INTEREST

None to declare.

AUTHORS' CONTRIBUTIONS

All authors made substantial contributions to the conception and design of the paper and the writing of the manuscript, critical review, approval of the final version of the manuscript, and agreement to account for all aspects of the work.

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