

PRACTICAL RELEVANCE OF STUDYING THE EFFECT OF STATINS ON THE EFFECTIVENESS OF TREATMENT OF PATIENTS WITH CHRONIC CORONARY HEART DISEASE WITH COVID-19

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Abstract

The pandemic of the new coronavirus infection COVID-19 and the quarantine measures that followed it, in particular, the self-isolation of the population, could seriously affect the quality of permanent pharmacotherapy (FT) and the adherence to it of patients with chronic non-communicable diseases. To determine the dynamics of adherence to continuous therapy in patients with chronic coronary heart disease (CHD) in self-isolation during the COVID-19 pandemic. In patients with stable coronary heart disease during the period of self-isolation during the COVID-19 pandemic and the associated lack of constant contact with the attending physician, a deterioration in adherence was revealed with an increase in the number of patients who stopped taking several or all prescribed drugs. The most pronounced negative dynamics was observed in adherence to disaggregants and statins. The leading barriers to adherence during the period of self-isolation were fear of side effects of LP and unwillingness to take large amounts of LP for a long time.

Keywords: adherence, pharmacotherapy, COVID-19 pandemic, period of self-isolation, stable coronary heart disease, telephone survey.

Introduction

The pandemic of the new coronavirus infection (CORONAVIRUS DISEASE 2019) COVID-19 and the quarantine measures that followed it, in particular, the self-isolation of the population, have left a serious imprint on the lifestyle of people, especially those suffering from chronic non-communicable diseases (CNID). First of all, this could affect the quality of the therapy they constantly take. For certain reasons, during the COVID-19 pandemic, such patients could have a number of problems with contacting the appropriate specialist doctor, receiving or purchasing medications they constantly take (LP). A number of recently published studies have reported the



occurrence of such problems in dermatological patients, in patients with autoimmune inflammatory rheumatic diseases [1,2].

The purpose of the study

The aim of this study was to find out how adherence to continuous therapy has changed in patients with chronically stable coronary artery disease (CHD) in self-isolation during the COVID19 pandemic.

Research materials and methods

ALIGN is a prospective observational cohort study. In this study, in patients with stable coronary heart disease, adherence to treatment after correction of pharmacotherapy (FT) in accordance with current clinical recommendations (CR), the effectiveness of this therapy and its impact on quality of life, depending on adherence indicators, were studied.

The study consisted of a turn-on visit (V0) and V1, V2 visits performed 3 and 12 months after V0. The ALIGN study protocol and questionnaires have been approved by an Independent Ethics Committee. In addition, the Independent Ethics Committee reviewed and approved the execution of an additional telephone survey after the completion of the study.

The study involved primary patients with proven stable coronary heart disease, whose data were included in the outpatient registry of patients with cardiovascular diseases and their risk factors. All patients gave informed consent to the use of personal data, as well as to participate in the study and surveys related to it. Adherence was assessed using the original questionnaire, the commitment scale of the National Society for Evidence-Based Pharmacotherapy (NODF).

Patients who fully complied with medical recommendations regarding FT were considered committed. Any violation of the intake regimen or an independent change in the daily dose of LP was regarded as partial adherence. Patients who completely stopped taking one or more drugs were considered to be unaffected. If necessary, dichotomous division into subgroups, patients with partial adherence and non-committed patients were combined into one subgroup of non-committed patients. In addition, the participants of the telephone survey were divided into two subgroups – with a deterioration in commitment during the period of self-isolation against the background of the COVID-19 pandemic and without changes in commitment.

Adherence was determined both to the entire FT as a whole (general adherence) and to drugs of each group specifically (to the intake of disaggregants, statins, beta-blockers, etc.). It should be noted that changes in adherence were diagnosed during the period of self-isolation, and not those that occurred earlier.

Of the patients included in the ALIGN study (n=71), visits V0, V1 and V2 were performed in 39 people, it was among these patients that a telephone survey was conducted during the COVID-19 pandemic. During telephone contact, adherence to the recommended cardiovascular PT (general and to drugs of certain drug groups) and its changes in self-isolation conditions were determined. The study cohort included 37 men (94.8%) and 2 women, the average age of patients was 67.6±8.5 years.

Statistical analysis was performed using the SPSS Statistics 23.0 package (IBM, USA). For descriptive statistics of quantitative data with their normal distribution, average values and standard deviations (M±SD) were used, with a distribution other than normal, the data are presented in the form of median and interquartile range (Me [25%;75%]). Qualitative variables are



presented as a percentage. The Mann-Whitney and Kruskal-Wallis criteria were used to compare quantitative data. For analytical statistics of qualitative indicators, Pearson's χ^2 criterion and Fisher's exact criterion (for 2×2 tables), calculation of the odds ratio (OR) with a 95% confidence interval (CI), and the z-criterion for comparing proportions were used.

The results of the study. During the period of self-isolation, a deterioration in patients' adherence to FT was revealed. The proportion of fully committed patients decreased by a third (from 87.1% to 53.8%) due to an increase in the number of non-committed patients who stopped taking several or all recommended medications during self-isolation ($p=0.024$). Two patients (5.1%) completely stopped the recommended FT. It should be emphasized that adherence to treatment during the COVID-19 pandemic has become worse than at the time of inclusion in the ALIGN study.

The leading reasons for non-adherence to FT were fear of side effects of LP and unwillingness to take large amounts of LP for a long time. The latter reason was the reason for the complete rejection of FT in 2 patients who took part in the survey. In addition, among the reasons for the violation of adherence, patients indicated the side effects of LP, the lack of a tangible effect from treatment, polypragmasia and the high price of LP. When using the dichotomous gradation of the results of the NODF adherence scale, it was demonstrated that during the period of self-isolation, the chance of patients to be non-susceptible to recommended drug treatment increases almost sixfold: OR=5.8; 95% CI (1.9; 18.0), $p=0.002$. A comparative analysis of the subgroups with impaired adherence and without changes in adherence revealed a definite trend: the presence of higher education in patients ($p=0.067$) or a history of percutaneous coronary intervention ($p=0.063$) was presumably a protective factor associated with the absence of deterioration in adherence during self-isolation. The differences between the subgroups did not reach statistical significance, which may be due to the small number of survey participants and insufficient statistical power of the study. The remaining clinical and demographic indicators, in particular, gender, age, and the presence of concomitant diseases, did not significantly affect the dynamics of adherence during the period of self-isolation.

During the period of self-isolation, a decrease in adherence to disaggregants ($p=0.047$) and statins ($p=0.055$) was revealed. The intake of beta-blockers, inhibitors of the renin-angiotensin-aldosterone system (RAAS) and dihydropyridine calcium antagonists remained unchanged. Discussion Crisis situations, including the COVID-19 pandemic, reveal new facets of the problem of adherence to the treatment of patients with various CVD, including those with cardiovascular diseases. During the pandemic, there is no possibility of regular visits by patients to attending physicians, an increase in stressful situations and an increase in various psychological/mental disorders, which in themselves can worsen patients' adherence to prescribed therapy. Issues of drug provision for the population and the need to expand the use of telemedicine technologies are of particular relevance [3]. To date, a limited number of studies have been conducted that examined adherence issues in patients with CVD during self-isolation during the COVID-19 pandemic.

Nevertheless, it should be noted that the side effects of drugs are one of the most common reasons for the cessation of FT even outside the pandemic, and do not lose their significance during the period of self-isolation. Despite this, it is clear that additional barriers to commitment arise during a pandemic. According to our data, during the period of self-isolation, the level of patients' adherence to taking cardiovascular drugs was lower than at the time of their inclusion in the ALIGN study. The main reasons for non-adherence, most often indicated by patients in a telephone survey, were fear of developing side effects of LP and unwillingness to take LP for a long time.



One of the possible explanations for the primacy of these reasons, among other barriers to adherence, is the lack of regular contact with a doctor during self-isolation and the resulting decrease in motivation to regularly follow medical recommendations regarding FT.

Just as in the work of Greek researchers [1], in which a telephone survey was conducted to assess the adherence of 237 psoriasis patients, we did not identify significant associations between any clinical and demographic indicators and adherence disorders in patients with stable coronary heart disease during self-isolation. Nevertheless, a trend has been identified that suggests that the presence of higher education in patients ($p=0.067$) or percutaneous coronary intervention ($p=0.063$) in the anamnesis can be considered as protective factors associated with the absence of deterioration in adherence during the COVID-19 pandemic. In contrast to the results of telephone surveys [1,2], including ours, in a cross-sectional study by German authors, the opposite conclusion was made about increased adherence to cardiovascular and antidiabetic FT in the COVID-19 pandemic.

This conclusion was based on analysis data on the implementation of prescriptions for cardiological and antidiabetic drugs by patients in the first quarter of 2020 compared to the same period in 2019 [4]. It was shown that the number of prescriptions for cardiovascular and antidiabetic drugs issued in early 2020 increased by 18-30%. Apparently, the use of various indirect methods of diagnosing adherence (telephone survey and analysis of the number of prescriptions written) was the reason for this discrepancy in the results.

Significant progress made at the beginning of the COVID-19 pandemic was achieved due to the possibility of long-term antibiotic treatment, as well as in connection with the identified danger of the new SARS-CoV-2 coronavirus to the data enzyme receptor. Nevertheless, this problem was solved promptly. According to the data obtained on the absence of a negative effect of ACE inhibitors on the infection and course of COVID-19, and on the increasing risk of cardiovascular complications when these drugs are discontinued, leading cardiological communities have issued recommendations approving the irrationality of the withdrawal of ACE inhibitors or angiotensin 2 receptor blockers in the prevention and treatment of COVID-19 in patients with cardiovascular diseases [5,6]. The results of our research have shown the effectiveness and timeliness of these recommendations, because No cases of withdrawal or discontinuation of RAAS inhibitors have been reported.

Conclusion

In patients with stable coronary heart disease during the period of self-isolation during the COVID-19 pandemic and the associated lack of constant contact with the attending physician, a deterioration in adherence was revealed with an increase in the number of patients who stopped taking several or all prescribed drugs. The most pronounced negative dynamics was observed in adherence to disaggregants and statins. The leading barriers to adherence during the period of self-isolation were fear of side effects of LP and unwillingness to take large amounts of LP for a long time.

References

1. Vakirlis E., Bakirtsi K., Papadimitriou I. et al. Possible treatment for psoriasis patients during the COVID-19 pandemic: relevant data due to the large number of deadly virus in Greece. J European Academy of Dermatology and Venereology. 2020; 34(11): e673-e675.



2. Fragoulis G.E., Evangelatos G., Arida A. et al. Increased interest in the treatment of patients with systemic rheumatological diseases in connection with the COVID-19 pandemic [published online before Monday, May 31, 2020]. *Ann Reum Dis.* 2020; ann Reumdis-2020-217935.
3. Kretchi I.A., Asiedu-Danso M., Kretchi J.P. Drug treatment and preparation for it during the COVID-19 pandemic: prevention and testing by low and middle income. *Res Social Adm Pharm.* 2020; S1551-7411(20)30332-6.
4. Kostev K., Kumar K., Konrad M., Bolken J. Some of them are intended for the treatment of cardiovascular diseases and diabetes before and during the quarantine of COVID-19 in Germany. *Clinical Pharmacologist.* 2020;58(9):475- 481.
5. Kuster G.M., Pfister O., Burkard T. Atypical pneumonia-CoV2: is it necessary to eliminate inhibitors of the renin-angiotensin system in patients with COVID-19? *Eur Heart J.* 2020;41(19):1801-3.
6. Driggin E., Madhavan M.V., Bikdeli B. Cardiovascular considerations for patients, healthcare professionals and health systems during the 2019 coronavirus disease pandemic (COVID-19). *I'm a Cardiol Call.* 2020;75(18):2352-2371.

