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# A Retrospective Comparison of the Assessment Results of our Geriatric Patients with 3 Different Pain Scales, with Insidential Abdominal Pain during the Covid 19 Pandemic

***Ertuğrul Allahverdi[1]; Tülay Diken Allahverdi[2]****

*[1]Kafkas University Department of Orthopedics and Traumatology.*

*[2]Kafkas University Department of General Surgery.*

***Corresponding Author(s): Tülay Diken Allahverdi**

Kafkas University Department of General Surgery, Turkey.

Email: drtulaydiken@hotmail.com

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**Keywords:** Covid 19; Pain scale; Visual; Abdominal pain; Myalgia.

## Abstract

**Aim:** Our aim in this study; It is aimed to accurately evaluate the pain in our patients with abdominal pain and general pain in the body with different measurement and scoring methods and to determine an effective treatment regimen.

**Material and method:** Our patients with acute symptoms diagnosed with COVID-19 were hospitalized, followed up and treated in our COVID Services in our Medical Faculty Health Research and Application Center hospital between November and December 2020. A total of 149 patients who did not have a defined chronic rheumatic joint disease, did not receive psychiatric diagnosis and treatment, did not receive steroid treatments, and were given only Paracetamol group drugs without NSAIDs, opioids, steroid group drugs during hospitalization and discharge were included in our study. Whether there is a relationship between VAS, WB, FLACC pain measurement scale values applied during hospitalization and discharge was evaluated by statistical analysis.

**Results:** 149 patients with abdominal pain and whole body pain were included in our study. We also obtained more reliable data in our observational pain assessment determinations in patients with pain due to Covid infection. Although we saw a significant improvement in pain symptoms, the rate of pain relief in FLACC was significant in 71 of our patients before and after treatment ($p<0.005$), 78 hospitalizations. We found that there was no significant difference between discharge and discharge.

**Conclusion:** The location and grading of pain in Covid 19 disease should be done with pain scales and treatment should be done by giving appropriate painkillers.

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## Introduction

Pain states related to symptoms in Covid patients adversely affect the individual's ability to continue activities of daily living independently and quality of life. Patients may have problems in performing activities of daily living such as dressing, going to the toilet, eating, personal hygiene and care, moving, making phone calls and climbing stairs, and may be fully or semi-dependent on other people. Pain ; According to the International Association for the Study of Pain (IASP), the definition of pain is an unpleasant sensory and emotional experience that accompanies or can be defined by existing or potential tissue damage. According to this explanation, pain is always subjective and subjective because it is a sensation and unpleasant in nature [1,2].

In our patients with COVID, acute-stage pain is classified according to neurophysiological mechanisms; it consists of nociceptive, neuropathic and psychosomatic pains.

Nociceptive pains; It is divided into two subgroups as somatic and visceral pain. The main difference between these two is that somatic pain is carried by sensory fibers and visceral pain is carried by sympathetic fibers. Somatic pain is more intense and painful; visceral pain, on the other hand, is more difficult to evaluate since it is a common and difficult to describe pain [1,2].

General muscle pain and fatigue are common symptoms of COVID-19[2]. It should be kept in mind that the cardiopulmonary, gastrointestinal and hepato-renal functions of our patients over 65 years of age, and the side effects of the drugs to be administered in the treatment of pain may cause very serious consequences, insufficiency and even the death of the immunosuppressive patients [1,2,3,4].

Our aim in this study; It is aimed to accurately evaluate the pain in our patients with abdominal pain and general pain in the body with different measurement and scoring methods and to determine an effective treatment regimen.

## Material and method

Our patients with acute symptoms diagnosed with COVID-19 were hospitalized, followed up and treated in our COVID Services in our Medical Faculty Health Research and Application Center hospital between November and December 2020.

Ethics approval was obtained from the Turkish Ministry of Health, the Ethics Committee of the Faculty of Medicine, Kafkas University, and the written permission of the hospital chief physician. A total of 149 patients who did not have a defined chronic rheumatic joint disease, did not receive psychiatric diagnosis and treatment, did not receive steroid treatments, and were given only Paracetamol group drugs without NSAIDs, opioids, steroid group drugs during hospitalization and discharge were included in our study.

Whether there is a relationship between VAS, WB, FLACC pain measurement scale values applied during hospitalization and discharge was evaluated by statistical analysis. The definitions of pain scoring are given as follows.Visual Comparison Scale - VAS (Visual Analog Scale - VAS) The patient marks his or her own pain on a 10 cm ruler with painlessness at one end and the most severe pain at the other. It was found to be more sensitive than other methods in the assessment of pain severity. The fact that the patient is tired may cause the marking to be done randomly, which may cause errors in the evaluation **(Figure 1)**.

Facial Pain Scale (Wong Baker (WB) Faces Scale - FS) The image close to the facial expression of the patient is determined. In this scale, pain scores are given according to the numerical values given to the faces. This scale is used in adults with language and mental capacity deficiencies. Facial expressions have historically been regarded as particularly reliable signs of pain intensity **(Figure 1)**.

FLACC Pain Scale (Face, Legs, Movement, Crying, Comfort): The FLACC categorical pain scale, which is applied to patients who can be difficult to establish intensive care and communication, is a scale with high reliability and validity in the assessment of pain. It is a multidimensional scale. It evaluates not only the severity of pain, but also the character and quality of the pain and its effects on the patient. Each category is evaluated on a scale of 0-2, the total score ranges from 0 to 10. A score of 0 indicates that the patient is calm and relaxed, a score of 1-3 indicates that the patient is mildly disturbed, a score of 4-6 indicates moderate pain, a score of 7-10 indicates that the patient is noticeably uncomfortable, has pain, or both [5,6,7,8,9,10,11,12].

## Results

A valid measurement tool of pain needs to be evaluated in order to decide whether pain management is effective. Pain dimensions can be evaluated with unidimensional and multidimensional scales. In our study, we used 3 different pain scales, namely VAS, WB and FLACC. According to 3 pain scales, the conditions of our patients were evaluated comparatively and the results were interpreted.

Demographic characteristics and results obtained from our patients were recorded in SPSS 20 and analyzed and interpreted with statistical data in Table 2. In our statistical analysis, Wilcoxon-signid rank test, p and z values were shown whether there was a significant difference between the variables **(Table 1)**. Diseases and radiological Co RADS evaluations were shown as % frequency **(Table 2)**.

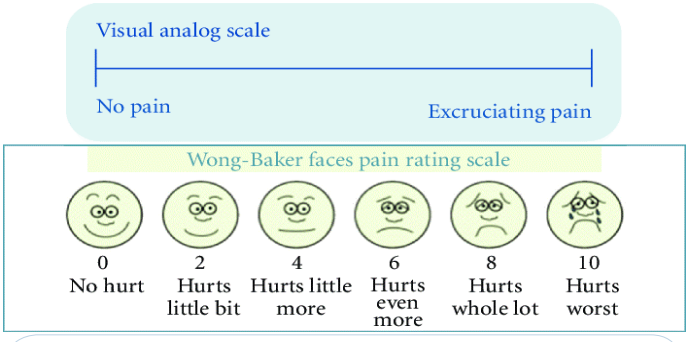


**Figure 1:** VAS (Visual Analog Scale), WB (Wong Baker=Facial Pain Rating Scale)).

**Table 1:** Wilcoxon signed-row test results.

| pain scale | | N=149 | Mean Rank | Sum of Ranks | Z değeri | P |
|---|---|---|---|---|---|---|
| VAS.tab-VAS.yat* | Negative Ranks | 145[a] | 73.00 | 10585.00 | -10.591 | 0.001 |
| | Positive Ranks | 0[b] | 0.00 | 0.00 | | |
| | Ties | 4[c] | | | | |
| a.VAS.TAB < VAS.YAT | | | | | | |
| b.VAS.TAB > VAS.YAT | | | | | | |
| c.VAS.TAB = VAS.YAT | | | | | | |
| WB.tab-WB.yat | Negative Ranks | 140[a] | 70.50 | 9870.00 | -10.850 | 0.001 |
| | Positive Ranks | 0[b] | 0.00 | 0.00 | | |
| | Ties | 9[c] | | | | |
| a.WB.TAB < WB.YAT | | | | | | |
| b.WB.TAB > WB.YAT | | | | | | |
| c.WB.TAB = WB.YAT | | | | | | |
| Flacc.tab-flacc.yat | Negative Ranks | 71[a] | 36.00 | 2556.00 | | |
| | Positive Ranks | 0[b] | 0.00 | 0.00 | -8.426 | 0.001 |
| | Ties | 78[c] | | | | |
| a.FLACC.TAB<FLACC.YAT | | | | | | |
| b.FLACC.TAB > FLACC.YAT | | | | | | |
| c.FLACC.TAB = FLACC.YAT | | | | | | |

**Table 2:** Demographic, Co-morbidities and CORADS results of the patients.

| Parameter | | number | (%) |
|---|---|---|---|
| Age | 65-69 | 55 | 36.9 |
| | 70 yaş ve üzeri | 94 | 63.1 |
| Gender | Female | 57 | 38.3 |
| | Male | 92 | 61.7 |
| Diabetes mellitus | Yes | 33 | 22.1 |
| | No | 116 | 77.9 |
| Hypertension | Yes | 39 | 26.2 |
| | No | 110 | 73.8 |
| Heart disease | Yes | 21 | 14.1 |
| | No | 128 | 85.9 |
| CO RADS | 1 | 8 | 5.4 |
| | 2 | 3 | 2.0 |
| | 3 | 15 | 10.1 |
| | 4 | 25 | 16.8 |
| | 5 | 98 | 65.8 |

According to these findings, our treatment regimens were planned by taking into account the covid-related immunosuppression status, comorbidities, histories, and constantly used drug treatments in all of our patients. In addition to the standard treatments of Covid, only paracetamol group analgesics were ordered based on the pain scales of almost all of our patients.

We tried to keep the respiratory, hepatic, renal and gastrointestinal system side effects due to Covid at a minimum level. In our 3 separate pain assessment scales; VAS and WB scales; the values at the beginning of the disease treatment and the values at discharge were found to be significant (Table 1, p<0.005). FLACC, a categorical observational measure of pain, was performed by the physician.

We also obtained more reliable data in our observational pain assessment determinations in patients with pain due to Covid infection. Although we saw a significant improvement in pain symptoms, the rate of pain relief in FLACC was significant in 71 of our patients before and after treatment (p<0.005), 78 hospitalizations. We found that there was no significant difference between discharge and discharge (Table 1P>0.005). During the treatment of our patients over 65 years of age, short stays in the hospital, contact with their relatives, and their desire to return to the nursing home environment; It is also possible that the scoring determined by our patients is more subjective, which is also reflected in the VAS and WB rating scales.

## Conclusion

The Covid-19 epidemic has become an epidemic that threatens global health, weakens the global economy and destabilizes societies around the world [13,14].

Accurate assessment of pain is essential and is the first step in determining the need for and effectiveness of appropriate treatment.Due to the pain of varying severity and accompanying systemic symptoms in our patients with Covid, patients aged 65 and over become dependent/semi-dependent in performing some activities of daily living. Depending on the degree to which their activities are affected, the time it takes for patients to stand up varies. Knowing the severity of the pain that affects their activities enables the patients to be discharged early by determining the treatment protocols for them. For this, the intensity of pain must be accurately measured.

There are many scales used to measure the severity of pain. The findings of this study, which was conducted to determine how pain affects activities of daily living, the relationship between the scales and the scale that best expresses the severity of the pain of the patients, were discussed with the literature.

The gold standard of pain assessment is considered self-report by the patient. However, this is usually not possible. In cases where self-report is not possible, observational scales have been created to facilitate the measurement and assessment of pain [1,2,3,4,5].

According to these evaluations; While it is possible that our patients aged 65 and over may determine their own descriptions and scale scores and be influenced by their psychological moods related to the symptoms of the disease, we believe that the observational pain measurement data in the FLACC measurement will allow more objective data to be determined depending on the physical examination findings.

Although there are not enough comparative articles evaluating pain profiles, studies have shown that there is a significant parallelism between pain and clinical, radiological and biochemical findings [15,16]. It has been reported that the rate in patients with myalgia, headache, throat and abdominal pain is 28.5%, 14.9%, 14.0%, 12.3%, respectively. Based on our results, we think that pain is not among the compelling symptoms in geriatric patients with Covid-19, but may be one of the determining factors in moderate and mild patients.

In order to ensure effective pain management, pain and sedation assessment scales that can be easily applied and allow the evaluation of the patient's response to treatment should be used, pain treatment should be selected according to the patient, the effectiveness of the treatments and applications should be evaluated, and these steps should be recorded and shared with the team [17]. Because effective sedation and analgesia facilitate and shorten the treatment process of critically ill patients [18]. Thus, providing quality care to critically ill patients and increasing their comfort level [19,20].

It was found that our patients aged 65 and over had more painful symptoms, and 16.8% had Co RADS 4 and 65.8% had Co RADS 5 on thorax CT scans (Table 2). It has been observed that systemic findings increase pain in cases of anxiety due to respiratory distress, renal and hepatic, gastrointestinal dysfunctions, and susceptibility to thromboembolism, and musculoskeletal pain increases due to deterioration of calcium phosphate balance [21].

The degree of VAS and WB pain is determined according to the patients' own statements, and the clinical follow-up of our geriatric patients causes a very complex situation with the addition of socio-economic factors and psychosomatic factors during the treatment of COVID 19 infection symptoms. However, in FLACC, our patients' physical and behavioral responses are evaluated and recorded in detail at different times by physicians. Its high reliability came to the fore in our study.

In this case, as in the studies conducted, it was decided in our study that, according to the pain assessment scales, in our patients over 65 years of age, less gastrointestinal, hepato-renal, cardio-pulmonary side effects, especially gastrointestinal, hepato-renal and cardio-pulmonary side effects, were effective in increasing the quality of life and in the duration of discharge from the hospital [22, 23]. Although 3 different pain measurements differed significantly between hospitalization and discharge of our patients, it was observed that statistically, in the negative rank evaluation of FLACC, nearly half of our patients, in the rate of their response to treatment, in the response to pain associated with symptoms, their scores decreased and their quality of life increased.

In the other half of our patient group, although there was no significant difference in the scoring values made before discharge from our clinics after the treatment, it was observed that the pain was relatively reduced and the quality of life and expectation were positively affected. Despite this, the clinical follow-ups of our patients in this group were longer and our control periods during their treatment were shorter. has been kept. As a result, in our study, it was observed that the severity of pain symptoms may be higher in geriatric age group patients according to pain measurement values, and patients may have different psychosocial and psychosomatic perceptions and evaluations of pain according to infection findings.

It should be kept in mind that the symptoms of chronic headache, abdominal pain and myalgia may continue for a longer time after treatment in patients with Covid. Therefore, the correct assessment of pain by physicians and healthcare professionals will guide the treatments to be applied. Planning effective and least-complicated treatments will prevent acute changes in all systemic organ functions from becoming irreversible [24,25,26,27]. In analgesia treatment regimens, only paracetamol group drugs were found to be sufficient in regulating pain.

It has been observed that the quality of life of our patients can be increased despite the pain threshold levels that vary according to the individual without being exposed to more hepatorenal, cardio pulmonary and gastrointestinal adverse events. We believe that treatment regimens for pain symptoms can be planned more objectively by using different categorical observational pain measurement methods as well as pain scales. We recommend that the comparative doses and treatment protocols of NSAIDs, opioids, corticosteroids and Paracetamol group analgesics be followed up with different observational pain scales in patients over 65 years of age, and the clinical, laboratory and radiological evaluations of this treatment protocol regarding other organ functions, especially hepatorenal, gastrointestinal and cardiopulmonary.

**Conflict of Interest**: No conflict of interest was declared by the authors.

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