

# TREATMENT OF PATIENTS WITH TERMINAL RENAL FAILURE RECEIVING CHRONIC HEMODIALYSIS

**Djurayeva Xursanoy Zakirovna**

**Andijan State Medical Institute**

***Abstract :** A growing number of publications in the literature show that chronic pain is also characteristic of patients with terminal renal failure (TRF). The disease tends to be moderate or severe and affects virtually all aspects of health and quality of life. Unfortunately, there is a lack of clinical and research focus in nephrology, and TAPN pain is poorly understood. The article reflects the main aspects of the problem of pain medication therapy for patients with terminal renal insufficiency receiving chronic hemodialysis. The main pathophysiological mechanisms of medication influence on kidney structures are described.*

***Keywords:** renal insufficiency, pain, hemodialysis, non-steroidal anti-inflammatory drugs, antidepressants, anticonvulsants in pain treatment.*

Dialysis is a successful life-supporting therapy for patients with end-stage renal failure (ESRF), its effectiveness is largely judged by the survival of patients. However, the dialysis patient population is aging and suffering from various concomitant diseases, and in the future it will become increasingly difficult to maintain a reasonable level of health-related quality of life (HRQL) for these patients. A growing body of literature has shown that pain is the most common symptom for patients with ESRF, affecting almost every aspect of HRQL, and is also the first symptom of greatest anxiety towards the end of patients' lives. The range of chronic pain varies from moderate to severe, as well as insufficiently stopped. For these reasons, it is very important for nephrologists and family doctors to master the principles of pain assessment and management. Despite this, clinical and research directions in this area are absent or insufficiently studied. This article will examine the epidemiology of chronic pain in ESRF, as well as discuss the basic principles for assessing and treating pain, and highlight some problems in the treatment of pain in ESRF, with the hope of further recommendations by medical professionals in the effective management of pain in

patients with ESRF.

Pain of various localization and intensity is one of the main complaints of patients with end-stage renal failure in conditions of dialysis centers. The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage." [1] The epidemiological evidence of pain in ESRF is extremely limited, but nevertheless, recent studies have shown that moderate to severe chronic pain is often found in ESRF. The literature suggests that between 37% and 50% of hemodialysis patients experience chronic pain and that for 82% of these patients, pain in intensity is moderate to severe. [2-4] Even in the last days of life, pain is present in 42% of patients leaving dialysis. It is unambiguous that it represents an important sensation that allows one to appropriately perceive the damaging effects and avoid factors causing danger to the body as a whole, but very often in this category of patients the pain syndrome is chronic and becomes an independent disease, reducing not only the quality of life of patients, but and worsens their condition for the next dialysis sessions. In addition, any pain always has an emotional aspect, which leaves its mark on the affective status of the patient and on his attitude not only to the disease, but also to the treatment as a whole. Adequate analgesic therapy is one of the most important tasks of everyday clinical practice, as it is important from an ethical and economic point of view and is an indispensable component of successful treatment and rehabilitation of such patients. Currently, for the choice of methods of drug therapy for pain, the most important is the understanding of the pathogenetic mechanisms underlying it, the so-called mechanism-based therapy. Allocate acute and chronic pain. It must be remembered that pain can be nociceptive, neuropathic, dysfunctional and mixed, therefore, approaches to drug therapy will differ. With nociceptive pain, the use of non-steroidal anti-inflammatory drugs (NSAID), analgesics is indicated, in some cases with severe nociceptive pain and opioid analgesics. With neuropathic pain, antidepressants, anticonvulsants, opioids, local anesthetics, or a combination of the listed groups

of drugs are indicated [1]. Patients with end-stage renal failure receiving therapy with programmed hemodialysis are a special cohort of patients whose approaches to the treatment of pain should also be special. In this article, we consider the characteristics of each group of drugs used for analgesic therapy in patients with the studied pathology. In 1986, WHO recommended a research-based three-step approach to painpharmacotherapy (Fig. 1).

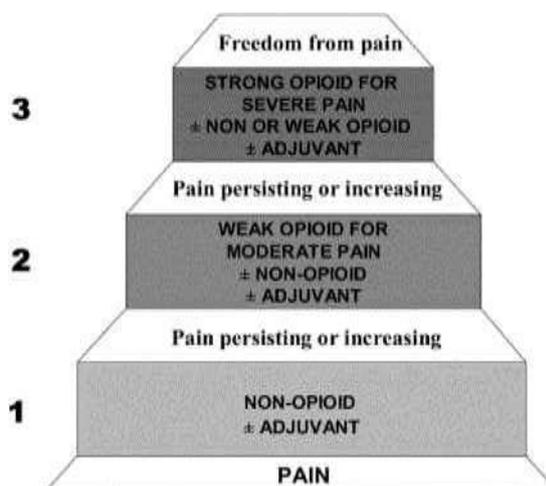


Figure 1. World Health Organization staircase.

However, this concept is not always applicable in dialysis patients. Let us dwell on some important points. The functional unit of the kidney is nephron. In its structure there is not a single component in which there would be no cyclooxygenase receptors (COX) -1 or COX-2. COX-1 receptors are responsible for controlling intrarenal hemodynamics and glomerular filtration rate, COX-2 receptors for salt and water excretion. It is COX-2 that is a protector from renoprivalent arterial hypertension [11]. The negative effect of NSAID on the kidneys is manifested by damage to interstitium, decreased glomerular filtration, increased blood pressure (BP) and decreased effectiveness of most antihypertensive drugs (beta- blockers, diuretics, angiotensin converting enzyme antagonists).

The etiology of pain can be caused by numerous causes. Pain can be caused by comorbidity despite the fact that dialysis supports life, systemic diseases and pain syndromes, such as limb ischemia and various neuropathies persist. Given the

physiological aging of dialysis patients and the increasing prevalence of comorbidity, including diabetes and hypertension, it is not surprising that chronic pain is a particular problem for patients with ESRF. However, pain can also be caused by ESRF itself. There are numerous pain syndromes unique to ESRF, such as calciphylaxis and renal osteodystrophy, which can develop during dialysis. Pain may be the result of a primary kidney disease (for example, polycystic kidney disease) or the result of treatment with ESRF. Painful chronic infections such as osteomyelitis and discitis are complications from central catheters, and arteriovenous fistulas can lead to painful ischemic neuropathies. Periodic pain caused by the introduction of a needle, muscle cramps and headaches during dialysis is perceived by some patients as chronic pain. [2]

Despite limited data, it seems that pain in the musculoskeletal system is the most common of chronic pain syndromes in both ESRF and the general population. [2] However, unlike the general population, musculoskeletal pain in ESRF is on average in severity equal to neuropathic and ischemic pain. The synergistic effect of hyperparathyroidism and osteoarthritis in the development of bone pain can contribute to the high prevalence and severity of musculoskeletal pain in this population.

However, the relative roles of osteoarthritis and renal osteodystrophy in these chronic pains in patients with ESRF are unclear. Given the various causes of pain in this population, it is not surprising that pain during dialysis in patients is often multifactorial. The ability to distinguish between potential causes of pain is necessary in determining the optimal pain management strategy. For example, neuropathic pain is often difficult to control because it is less sensitive to strong opioids and usually requires adjuvants such as antidepressants and anticonvulsants. The synergistic interaction of these drugs with opioids is usually required for adequate pain control. Chronic pain is associated with a psychological disorder; as well as the problem of interpersonal relationships; excessive use of medical care; a significant limitation of activity at work, in the family and social life; and most importantly, the adoption of the role of the chronic patient. [6,7]

Recent studies in the field of ESRF suggest that the patient's perception of physical symptoms, especially pain associated with depression and insomnia, may be more important than objective assessments in the determination of HRQL of patients with ESRF. [2,8,9] The term –total pain [10] refers to any unmet needs of the patient that can aggravate the pain and capture the importance of all of the following interactions: physical, emotional (anxiety and depression), social (isolation and abandonment), spiritual (search for meaning and purpose), and financial (fear of burdening the family). [11] The pain threshold and response to pain therapy is largely dependent on these patient-related factors, rather than the effectiveness of the analgesics. These psychosocial and spiritual problems enter into a vicious circle of interaction and prolong the manifestation of the patient's physical symptoms and suffering. This emphasizes the need to solve psychosocial and spiritual problems, as well as the physical management of pain.

Pain in ESRF is not amenable to adequate treatment, and despite the fact that there is an increasing prevalence of chronic pain, the use of analgesics has decreased over the past few years.

## References

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