

PSYCHOLOGICAL ASPECTS OF POST-OPERATIVE HOSPITAL INFECTIONS

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ABSTRACT

Introduction. Post-operative hospital infections (POI) are conditions whose specific courses strongly determine patients' psychological conditions, potentially leading to the exacerbation of the pathomechanism and the prevention of effective treatment.

Aim. The aim of this article was to present the specificity of psychological functioning of patients suffering from POI.

The objective is both theoretical and practical due to the possibility of utilizing theoretical assumptions to improve the cooperation with patients suffering from infections, and, consequently, to improve the global healing process.

Discussion. This analysis focuses on the correlation between the biological aspects of the infection process and those psychological aspects emerging as a result of pathological biological changes occurring in the body of an infected person. It is based on the recognition of two mutually complementing concepts concerning a human being: the holistic concept and the concept of biopsychosocial unity. The former assumes a harmonious integration of body, mind and soul. The latter recognizes the mutual connections between body, mind and social functioning.

This article attempts to extrapolate the assumptions and study results concerning the functioning of a human being dealing with a disease understood as a difficult, threatening situation, to the functioning of patients dealing with POI.

Conclusions. The mechanism explaining the biological-psychological correlations in the course of POI requires further studies involving the empirical level. Additionally, in order to achieve a comprehensive picture of psychological aspects of POI, research needs to be extended and to include medical staff.

Key words: post-operative hospital infection (POI), behavior, emotions, cognitive processes.

INTRODUCTION

Development of medical sciences involving a constant extension of diagnostic methods of a surgical nature, as well as increasing the number and types of surgical procedures, frequently of an invasive nature, creates favorable conditions for POI. Considering the number of surgeries performed daily worldwide, the incidence of POI has become a serious challenge for contemporary medicine. Hospital infections are a direct cause of deaths of 30 000 patients globally, and an indirect cause in the case of 70 000 patients. Every day 1400 patients die from septicemia [4]. Apart from posing a direct threat to life, POI are also indirectly life threatening, contributing to complications or a worsening of the general condition of the patient.

Medical literature reports extensively on the pathogenesis (etiology) of the infection process as refers to the biological level. Risk factors, means of infection dissemination (epidemiology) and activities aimed at the prophylactics and controlling POI are discussed broadly [5, 17, 11, 2]. There is, however, a lack of data concerning the psychological aspects of POI. Collecting empirical data revealing psychological aspects of POI is very difficult to accomplish. These difficulties stem directly from the evaluation of the POI process at the biological level. Specificity of the infection process, its course and therapeutic treatment principles frequently prevent, considering the well-being and health of the patient, conducting additional psychological examinations. The necessity of treating the patient in septic conditions, without the access of people other than medical staff, some symptoms of infection (pain, high fever, breathing difficulties, psychomotor anxiety, a loss of consciousness) seriously limit or exclude the possibility of conducting any psychological examinations. Consequently, an attempt undertaken in this article to analyze the psychological functioning of patients with POI is of a theoretical nature.

AIM

The aim of this article is to present the specificity of the psychological functioning of patients suffering from POI. The objective is both theoretical and practical due to the possibility of utilizing theoretical assumptions to improve the cooperation with patients suffering from infections, and, consequently, to improve the global healing process.

DISCUSSION

This analysis focuses on the correlation between the biological aspects of the infection process and those psychological aspects emerging as a result of pathological biological changes occurring in the body of an infected person.

The analysis is based on the recognition of two mutually complementing concepts of a human being: the holistic concept [6] and the concept of biopsychosocial unity [13]. The former assumes a harmonious integration of body, mind and soul. The latter recognizes the mutual connections between body, mind and social functioning. POI process is defined as an infection directly connected with an undergone surgical procedure and hospital stay, which develops during the patient's hospitalization or after release from hospital. In the case of micro-organisms of a long or very long incubation period (*Legionella*, virus hepatitis B and C, HIV), the development of a disease may last 2 weeks (*Legionella pneumonia*), 6 months (virus hepatitis B) or many years (AIDS and virus hepatitis C) [12].

The analysis of the psychological aspects of POI is of a two-stage nature. The first stage refers to infection as a specific disease process on a general level, while the second stage takes into account a clinical picture of specific types of POI.

The assumption of the holistic concept of a human being and the biopsychosocial unity justifies the claim that infection is a process involving three levels of human functioning: biological, psychological and social. When analyzing the psychological functioning of people dealing with a disease, three coexisting processes need to be considered: cognition, emotions and behavior [19]. Infection, as any other disease, creates in the patient's mind a specific cognitive representation. A picture of one's own disease, involving an evaluation of the situation and assumptions concerning it (causes of infection, course, prognosis, treatment possibilities) is subjective, and as such is not always consistent with the actual situation and its objective, medical aspects. Patients rarely rely on knowledge received from their physicians. This stems from the fact that frequently patients do not receive sufficient information concerning their health condition, and even if they do, they prefer to rely on information from non-medical, non-professional sources (other patients, the Internet, general knowledge, life experience). The way of thinking about infection generates specific emotions and, consequently, determines the patient's behavior in this situation.

POI is a sudden event, unexpected by patients already suffering from many physical ailments, for which they are not psychologically prepared. It generally occurs at the point of hospitalization when patients, having undergone surgical procedures, expect health improvement. A sudden turn towards the worsening of the health condition or even one that is life threatening, affects patients' psychological stability [17].

In the majority of cases, patients treat infection as a signal of an actual threat to their health, values and lives. If, additionally, infections' genesis is associated with physicians' mistakes or other medical staff errors, the patient's perception of the situation leads to losing trust in the physicians or medical staff, and occasionally to the science of medicine as such. The patient loses a feeling of safety in the therapeutic situation in which he/she is involved, becomes suspicious and distrustful. This, in

turn, may generate the patient's lack of willingness to cooperate with medical staff, not observing medical recommendations, rejecting treatment suggestions (further diagnostic examinations, introducing new medication, another surgery), which may finally lead to a further worsening of the health condition.

Lack of the expected improvement, the presence of infection symptoms or their intensification at the physical level are usually sources of a strong, general anxiety. Anxiety may generate two types of reactions. On the one hand, it makes the patient more sensitive to the disease symptoms, ailments stemming from it and information concerning threats connected with it. This results in a heightened focus on one's body, visible pathological changes within it, burning sensation, swelling, pain, etc. Increased psychological tension frequently causes increased muscular tone, which heightens physiological sensations, most of all pain [7]. In effect, this may lead to falsifying the evaluation of actual sensations accompanying the infection and searching for somatic disorders where they are in fact absent. Sometimes natural physiological signs are treated as disease symptoms. On the other hand, if the anxiety level is so high that the patient in order to function in relative psychological stability must reduce it unconsciously, defense mechanisms appear: denying the symptoms, repressing or ignoring them. The patient, contrary to the first type of reaction, becomes as if insensitive to the symptoms of infection, does not register them in his/her consciousness, negates them. Even if recognized, the symptoms are treated as indicators of some other, not dangerous disease or considered as insignificant and not worthy of attention. The patient avoids contact with the physician, afraid of revealing the symptoms of the disease. Assuming a naive stand "it has come – it will go", the patient does not feel a need to inform the physician about his/her ailments. The patient then does not ask for assistance, diminishes the significance and strength of the symptoms ("it's nothing"). Moreover, this specific, unconscious perceptive defense may select and distort information provided by the physician.

In both types of reactions to anxiety, communication with the physician may involve false information from the point of view of biological evaluation. The patient may claim feeling much worse or better than he/she does in reality [8–10]. Such an attitude negatively affects the therapeutic process and is life threatening.

Further, the analysis of the psychological aspects of POI requires taking into account the specificity of the clinical picture of a given infection. Type of infection and specificity of its course affect the specificity of psychological functioning of the patient. Consecutive stages of the infection's development and specific somatic symptoms accompanying them determine particular psychological reactions. These reactions are evaluated and modified, beginning from diagnosis and including particular treatment stages.

Hospital infections of post-operative wounds are determined by the interaction between the host, the wound and the virulence of the colonizing micro-organisms. Initially, the patient complains about unpleasant physical symptoms, such as: pain,

reddening, swelling, pus, increased bodily temperature, disruption in organs' functions, diarrhea [5]. Physical sensations emanating from the organism, initially being a source of discomfort, after the diagnosis quickly change into a feeling of threat, accompanied by a general anxiety turning to fear. Moreover, if the infection is to result in further, painful, unpleasant medical procedures, or another surgery, anxiety may be connected with anger and aggression on the part of the patient directed at the entire medical situation or at particular people (attending physician, other medical staff). The patient may directly blame a particular physician or other members of the medical staff for the appearance and development of the infection. Hospital becomes a threatening institution rather than a safe place providing an assurance of recovery or at least a hope for regaining health.

Pathological changes accompanying post-operative wound infection at the bodily level (wound dehiscence, exudate) may be also evaluated negatively by the patient in terms of esthetics. Thus, they pose a threat to values professed by the patient, making up the image of one's body or person as such. In this case, with regard to the patient's emotions we may note a mood lowering of a depressive nature [14].

The second most frequent hospital infection, often diagnosed as post-operative complication (lung and abdomen procedures) is hospital-acquired pneumonia [18]. As in the case of post-operative wound infection, the most frequent psychological reactions, as reactions to the symptoms (fever, shivering, dyspnea, pain in the chest) and diagnosis involve: fear, terror and anxiety. Development of pneumonia leading to a serious clinical condition, with the necessity of using the respirator, heightens the sensation of threat experienced by the patient and his/her family.

"The course of sepsis leads to a systemic immunological reaction, manifested by a diversified clinical picture, with the most serious form being septic shock with circulatory and respiratory failure and organ dysfunctions" [16]. Very often, the patient loses touch with the surrounding environment, remaining in a pharmacological coma. Psychological weight is then transferred to the patient's family. The probability of death is high, and the loss of someone close is connected with an enormous psychological burden for the family. Perception of a life threatening situation provokes very strong fear and anxiety. Psychological reactions at the behavioral level include: crying accompanied sometimes with aggression directed at medical staff who are blamed for the infection and accused of not looking after the patient properly enough. Both crying and aggression may be rooted in unconscious defense mechanisms activated in this difficult situation. The person who reveals them despite his/her own will reacts to the disease according to the earlier stage of his/her psychological development, and behaves as if a child. Apart from regression, there appear rationalization, denial and withdrawal. Attempts at negating the actual situation may appear as well – "this can't be true" or avoidance. Members of the family are not then so interested in the patient's health condition. They assume that there is no need to be

“hysterical” about it since it is nothing serious, it is the normal course of the disease and the patient will recover soon. Family members do not come to the hospital, as they do not want to “disturb” the patient and “occupy” the physician’s time who have other, more serious cases to treat.

HIV and virus hepatitis C infections may also result from surgical procedures and hospitalizations. These are infections with a prolonged incubation period (from a few months to a few years) whose results involve the entire life, leading directly to chronic and terminal diseases. As such, they result in strong disturbances of psychological stability leading to permanent personality changes [14], and sometimes to mental disorders. First, fear and anxiety appear which are caused by the very information about the infection. Patients, aware of the infection’s development and specificity, feel completely hopeless [3], suffer from depression, experience suicidal thoughts [1].

The very result of the test indicating the presence of HIV or virus hepatitis C significantly affects psychological functions. It often releases coping strategies connected with avoidance. Patients are shocked, they do not believe that it is true. The second step is withdrawal from social life and refusing social support [15]. Patients, aware of further stages of the disease, lose the feeling of safety. They live on a daily basis with the awareness of the possibility of disease progression and death. They function in a permanent uncertainty as to what the next day might bring. They also face the necessity of changing life priorities and the ravages of the disease itself.

CONCLUSIONS

Post-operative infection is a difficult moment in the therapeutic process as it involves the worsening of the health condition at the point when the patient and family expect improvement. Because of its crisis-like nature, it becomes a source for disturbing psychological stability and for creating changes in a patient’s functioning.

Psychological processes revealed in POI involve: cognition, emotions and behavior of the patient. At the cognitive level, the perception of infection as threatening to health, values and life itself is most frequent. The patient loses a feeling of safety. In terms of emotions, this way of thinking leads to strong anxiety and fear experienced by the patient. If the anxiety level exceeds the patient’s adaptive possibilities, defense mechanisms appear, such as: regression, rationalization, denial, repression. Additionally, aggression and fury may appear, directed at the general situation connected with the disease or at particular members of the medical staff. In the case of infections involving the perspective of an entire life (HIV, virus hepatitis C) there appear depression and suicidal thoughts.

This theoretical analysis requires empirical verification, and research needs to be extended to include medical staff.

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