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Ketamine-Assisted Psychedelic Therapy

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KETAMINE-ASSISTED PSYCHEDELIC THERAPY

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This paper is an overview of the ketamine psychedelic therapy method developed by the authors. The clinical-psychological studies conducted have shown that ketamine psychedelic therapy is an efficient approach to the treatment of alcoholism, and may be successfully used in treating some types of drug addiction and neurotic disorders. Possible underlying mechanisms of ketamine psychedelic therapy are discussed from the standpoint of various psychotherapeutic paradigms (transpersonal, psychodynamic, behavioral).

The pathological craving for alcohol (as well as other types of chemical dependence) may be considered as a pathological desire to change the state of one's consciousness with the help of one or another drug. If we look at alcoholism problems from this standpoint, theoretical and methodological concepts of transpersonal psychology (Grof, 1976, 1985) appear to have considerable promise, since from this perspective the craving for alcohol and drugs can be considered an unrealized craving for transcendence, for wholeness (Grof, 1990). From these considerations, and on the basis of considerable empirical data, psychedelic therapy may represent one of the most efficient approaches to treating chemical dependence. Psychedelic therapy uses so-called "psychedelic" drugs that induce hallucinations and profound mystical and transcendental transpersonal experience. The vast and diverse literature on the subject provides evidence that the psychedelic experience may contribute to the cathartic process: (a) stable, positive psychological changes; (b) personality growth and self-cognition; (c) important insights into existential problems and the meaning of life; (d) transformation of one's life value system; (e) a change of view of one's self and the world around; (f) insight into life and death; (g) a rise of creative activities; (h) broadening of spiritual horizons; and (i) harmonization of a person's relationships with the world and other people (Krupitsky & Grinenko, 1992). Psychotherapy, in the context of the given psychedelic treatment paradigm, consists in the preparation of a patient for a psychedelic session, in the psychotherapeutic facilitation of the session, and in a special psychotherapeutic post-session which is intended to help a patient to integrate the psychedelic experience and correlate the experience with the patient's life and personality problems. Psychotherapy here acquires quite a special quality: it is considered not only as a process of resolution of certain psychological problems of personality, but also as an important stage of spiritual transformation.

Method

Psychedelic therapy was shown to be efficient for alcoholism treatment in the sixties. A series of studies was carried out (Grinspoon & Bakalar, 1979), but later the research in this field was held up because most psychedelic drugs (such as LSD, mescaline, psilocybin) were prohibited and their use was strictly limited. At the same time, anesthesiological practice showed that ketamine-containing anesthetics, whose use was permitted for general anesthesia, in some cases could induce bright hallucinations and profound psychedelic experiences. This property of ketamine was used as the basis for our method of psychedelic psychotherapy for alcoholism called "Ketamine Psychedelic Therapy" (KPT) (Krupitsky et al., 1990; Krupitsky, 1992; Krupitsky et al., 1992).

One can distinguish three main stages in the KPT procedure. The first stage is preparatory. In this stage, the patients undergo 1 to 3 sessions of individual psychotherapy. During these sessions, a patient, among other things, gains an idea of the "psychotherapeutic myth" about the mechanism of the therapeutic effect of KPT. The patient is told that in order to treat pathological alcohol dependence and establish a stable mental set of sobriety, during the psychedelic session he or she will be brought to a special state to induce deep experiences and realization of the negative aspects and consequences of alcohol abuse and the positive side of sobriety. It is emphasized that earlier unrealized, individually significant concepts of the negative side and consequences of alcoholism that have been repressed and ousted from one's consciousness but kept in his/her subconscious, during the psychedelic session will manifest themselves in consciousness in a peculiar symbolic form of emotionally saturated visions (hallucinations). Such realization and sharp experience of the negative aspects of alcoholism will result later in the patients' psychological unacceptance of alcohol abuse and in a stable orientation towards sobriety. We also try to explain to our patients that the psychedelic session will allow them to see and sense the subconscious roots of their alcohol problems, probably in a specific symbolic form. They will understand that the alcohol problems of their lives are indissolubly related to deep personality problems and are often the consequence of the latter. Moreover, we attempt to explain to the patients that the psychedelic session may induce important insights for the resolution of the above problems concerning the system of life values, notions of one's individual self and the world around, the meaning of life, and even worldview aspects. All this may entail profound positive changes in personality that will be undoubtedly auspicious for the patients' sober life. One should note that such a session does not represent a didactic monologue of a psychotherapist. The abstract "psychotherapeutic myth" is not simply explained to the patient, it is discussed with him/her and is filled in with some concrete content during the dialogue. One pays special attention to such points as the patient's personal motives for treatment and sobriety; goals and meanings of his/her sober life; his/her idea of the cause of the disease and its consequences; and his/her suggestions as to what hinders sobriety and what favors it, etc. The individually concretized "psychotherapeutic myth" formed during this dialogue becomes the most important therapeutic factor responsible for the psychological content of the second stage of the KPT procedure, both from the standpoint of the effective psychotherapeutic technique during the psychedelic session and from the standpoint of vectorizing the psychedelic experience of the patient.

The second stage is the KPT procedure itself, i.e., a ketamine-assisted psychedelic session during which the patient is given an injection of aethimizol (i.m.), then an injection of ketamine (2-3 mg/kg i.m.), and then an injection of bemegrade (i.v.). Being an anxiogene, bemegrade enhances negative emotional experiences and visions and aethimizol provides stable fixing of the psychedelic experiences in long-term memory (Smirnov & Borodkin, 1979). In addition, both aethimizol and bemegrade are analeptic drugs: therefore, they enhance the functional cortical activity (tone) which opens additional opportunities for the psychotherapeutic dialogue during the ketamine session. Further, against the background of special emotiogenic dramatical music, the patient who has hallucinatory psychedelic experiences, during which a certain verbal contact (rapport) with him/her is maintained, is exposed to psychotherapeutic influences. These influences, based on the concrete data of the patient's anamnesis and the content of the discussions held with him/her at the first stage, are directed at establishing a stable set for sobriety and an alcohol abuse unacceptance, to the resolution of certain personality problems, and to the deeper acceptance and understanding of the meanings and values of sober life. The peculiar effect of the combination of injected drugs and their dosage allows us not to restrict ourselves to a suggestive monologue, but to carry out a special personality-oriented psychotherapeutic dialogue with the patient during his/her hallucinatory psychedelic experiences. During this dialogue, we try to help our patients to accept the urgency and significance of life purposes, values, and meanings that would promote the sober life. In addition, we lay stress upon the negative aspects of the patient's future life according to the "alcoholic fate" scenario. Moreover, at certain points of the psychedelic session (usually during points of highly intensive hallucinatory experiences), the patient is given an opportunity to smell and taste alcohol. The demonstration of the alcohol smell and taste during the session is intended not only to enhance negative experiences, thus

forming a profound aversion towards alcohol, but also to enhance the presence and the negative emotional coloring of the alcohol themes in the patient's psychedelic experience itself.

The KPT procedure is conducted by two physicians—a psychotherapist and an anesthesiologist (to assist in any complications and side-effects).

At the third stage, the patients (4-5 people) who went through the psychedelic session the day before now undergo a long session of group psychotherapy. In the period between the second and third stage (usually 1-3 days), the patients, according to the psychotherapist's instruction, try to write down a detailed report on everything they experienced during the psychedelic session. At the same time, they are instructed not to tell anybody about their experience until after the group session. This requirement to keep one's psychedelic experience in secret until the final psychotherapeutic session adds to the significance of the forthcoming group discussion, and it makes the patient focus attention once more on his/her experience during the psychedelic session. During the final session of psychotherapy the patients share the experiences they had during the psychedelic session. They discuss them, and with the help of a psychotherapist, interpret the individual personality significance of the symbolic content of their experiences. This discussion makes each patient correlate the content of the psychedelic experience with his/her life problems (first of all connected with alcohol abuse) and thus realize and fix a set for sobriety. At this stage we also try to help the patients to accept a new attitude to their individual selves and to the world around them, defined by the profound, bright, and singular psychedelic experience, and to help them to integrate new, often unexpected meanings, values, and attitudes to their individual selves and the world that often result from their psychedelic insights.

Clinical Studies

The ketamine psychedelic therapy (KPT) was carried out with 86 male alcoholic patients (age 25-49, average age 33.4, ± 1.07 ; the alcohol withdrawal syndrome was formed, on the average, 5.6, ± 0.47 years ago; all patients could not control alcohol consumption). The KPT procedure followed a standard three-month treatment course at a hospital. The patients were all voluntary and gave written consent for the KPT treatment. The control group was composed of 100 alcoholics (average age 38.4, ± 0.81 ; the alcohol withdrawal syndrome formed 6.8, ± 0.54 years ago; all patients could not control alcohol consumption). They took the same three-month treatment course at the same hospital, but were given only conventional methods of treatment (pharmacotherapy and individual and group psychotherapy for sobriety). Orientation to the treatment and the degree of social disadaptation in both groups showed high interindividual variability, however, on the average, the groups did not significantly differ in these characteristics. To determine the efficiency of the treatment, a year after the discharge of the patients from the hospital we collected catamnestic data about all the patients who had taken part in the study.

According to the catamnestic follow-up data, abstinence for more than 1 year was observed in 60 people (69.8%) who took KPT, 24 people (27.9%) had a relapse, and we could not obtain the catamnestic data on two patients (2.3%). In the control group (100 patients), where treatment consisted of only conventional methods, only 24 patients (24%) were sober for more than 1 year. Thus, the catamnestic data show that ketamine psychedelic therapy is of much higher efficiency in alcoholism treatment.

Most of the patients treated by the KPT method, several months after they had been discharged from the hospital, noted that KPT had contributed quite a lot to their sobriety. For example, of significance is the report sent by patient C.H., seven months after he was discharged:

The experience related with the KPT procedure (very bright) is imprinted in mind and is a kind of "taboo" on drinking In the moments when a desire to drink arises, the visions are here again to remind me of the negative aspects of alcoholism. This immediately kills the craving and prevents a relapse.

Psychological Studies

The psychological examination of the patients before and after KPT, with the help of the Minnesota Multiphasic Personality Inventory (MMPI), demonstrated certain dynamics of the patients' personality profiles. For example, after the KPT procedure one could see a decrease in the indices of a majority of the main MMPI scales. The most apparent and statistically significant decrease in profiles occurred in the main scales of hypochondria, depression, psychostenia, and schizophrenia, as well as in the additional, Taylor Anxiety Scale administered. At the same time, the assessment in the Ego Force Scale increased. On the whole, such favorable psychological dynamics provide evidence that the patients grew more confident in themselves and in their abilities and future, less anxious and neurotic, and emotionally more open. Against the background of these general tendencies, in the majority of cases, some essential individual variations appeared (e.g., concerning changes in such scales as "masculinity-femininity," "paranoia," "hypomania," "sensitization-repression") that reflected, as a rule, a certain harmonization of the patients' personality profiles.

In another work, we studied the changes in the psychosemantic sphere induced in 32 alcoholics during a ketamine psychedelic session. All the patients were examined before and after the psychedelic session by means of the personality differential (PD), a personality-oriented version of Osgood's semantic differential (Bazhin & Etkind, 1983), and the color test of attitudes (CTA) (Etkind, 1980). PD and CTA were arranged in such a manner that one could define some peculiarities of the personality attitude system of alcoholic patients. For this purpose, the tests were used to analyze the following spheres of a personality's relations: relation to one's individual self, to close relatives, to the ideal image of self, to the psychotherapist, to one's alcoholic disease, and to the images "Me drunk" and "Me sober." The CTA was conducted according to the following procedure: at first, a patient was asked to arrange 8 colors of the Lüscher test in the order of their correspondence (similarity) to each of the above-mentioned images. Then he/she was asked to arrange the same colors in the order of preference (by the preference degree). To assess the attitude to a certain image, we quantitatively compared the resemblance of the two allotments. The first allotment showed that the patient had arranged the colors of the Lüscher test in the order of the correspondence to a certain image (one of the images mentioned above), i.e., from "most similar, suitable" to a certain image to "most different, unsuitable"; the second allotment (the same for all images) showed that the patient arranged the colors in the order of preference. Thus, through a comparison of the resemblance of these two allotments (one to the certain image and another one according to the degree of preference), we could quantitatively assess the nonverbal (and mostly unrealized) patient's attitude to each of the above-mentioned images. The combination of PD and CTA allowed us, therefore, to assess to a certain extent the changes in the system of personality relations and attitudes that occurred after KPT not only at the conscious level, but also probably at the subconscious level of the psyche.

The analysis of CTA results revealed that after ketamine psychedelic therapy statistically reliable positive changes occurred in the emotional attitude to the psychotherapist, to close relatives, to the ideal image of "Self," and to the image "Me sober." At the same time, the attitude to the image "Me drunk" became more negative. One should also mention that the emotional attitude to one's individual self tends to be better. According to the PD data, the positive change (after KPT) took place only in the attitude to one's own self.

It is important that KPT resulted in a considerable decrease in differences between the isosemantic indices of CTA and PD (i.e., between the CTA and PD assessments of one and the same images),

which is evidence for the reduction of disagreement between verbal and nonverbal estimates of personality attitudes. This reduction was associated mainly with the change in CTA indices and was most pronounced in those spheres of attitudes, where, according to CTA data, statistically reliable changes had occurred.

Thus, ketamine-assisted psychedelic therapy of alcoholism resulted in considerable positive changes in the sphere of personality attitudes mainly due to the transformation of nonverbal (mostly unrealized) emotional attitudes. We should emphasize that the treatment entailed essential positive changes in the patient's nonverbal assessment of the attitude to the psychotherapist, close relatives, to the ideal image of self, and to the image "Me sober." This means that the patient began to accept the above images more, and thus the sobriety related with them. In addition, the fact that KPT induced a highly positive emotional attitude to the psychotherapist (like a transfer) offers strong possibilities of continuing the psychotherapeutic process.

Of great interest is the considerable difference between verbal and nonverbal estimates of the patients' personality attitudes recorded before the KPT. This difference probably reflects the discord between the conscious (realized) and unconscious (unrealized) estimates of personality attitudes. Such a discord is probably caused by some peculiar differences of the realized estimates from the unrealized ones, and possibly characterizes the ambivalence of the patient's position, disagreement between what is declared at the verbal level and what takes place at the level of the immediate experience. Such a disagreement may result in psychological discomfort, internal tension, or in communication problems, i.e., a reduction in a person's psychological adaptation. All this may provoke the relapse of the alcoholism. The reduction of such a discord by KPT should be considered as the achievement of the personality's psychological status that favors sober life.

One may suggest that the reduction of the discord between verbal (realized) and nonverbal (unrealized) personality attitude estimates, as well as the harmonization of the MMPI profile owing to the KPT procedure, are closely related with the awareness (often in some symbolic form) and partial resolution during psychedelic therapy of some important internal conflicts and personality problems that are often connected in alcoholics with alcohol abuse and its consequences. This is confirmed both by the patients' statements during the psychedelic session and by their reports on what they experienced written after the session (see below).

In one of our recent studies, we found that strong and profound transpersonal, often religious and mystical, experiences induced by ketamine promoted the spiritual development of the patients. To assess the changes in the level of spirituality we used our own special "Assessment Scale of Spirituality Changes" based on a combination of C. Whitfield's "Spirituality Self-Assessment Scale" (Whitfield, 1984) and K. Ring's "Life Changes Questionnaire" (Ring, 1984). Whitfield's scale is intended to assess changes in spirituality brought about by treatment in the groups of Alcoholics Anonymous; Ring's questionnaire is designed to estimate the changes in the system of life values and meanings of individuals who have had a near-death experience. The studies using our Assessment Scale of Spirituality Changes showed that ketamine psychedelic therapy results in a considerable growth of spirituality in alcoholics, comparable to changes in spiritual development observed in healthy volunteers after a special course of meditation. This growth significantly exceeds those extremely small changes in spirituality that are observed in alcoholic patients after an autogenic training course (a course of relaxation and self-hypnosis). (The influence of a meditation training course on the level of spiritual development was studied by I. V. Kungurtsev and O. S. Luchakova.)

As has been shown, spiritual growth is an important factor for maintaining the sober life (remission) of alcoholic patients (Corrington, 1989). Therefore, the growth of the patient's spirituality owing to KPT may be also considered as an important aspect of the therapeutic action which promotes a high percentage of stable and prolonged remissions (recoverness). However, the study of the ketamine psychedelic therapy effect on the spirituality of alcoholic patients is evidence that KPT is apparently

something more than a mere procedure assigned to form a deep mental set for sobriety. The results of this study show that KPT, as a rule, induces certain positive changes in the system of life purposes and values, in the attitude to various aspects of life and death, and in the patients' worldview. We should mention that the nature of these changes is very auspicious for the sober life.

Underlying Mechanisms

To analyze the problem of ascertaining the underlying mechanisms of KPT efficiency, first of all, one should note that it is a procedure that is extremely complex, multi-dimensional, and far from being fully understood. However, in our opinion, one can single out several most distinctive aspects of the realization of the therapeutic potential of KPT.

The first of them is the simplest one, and concerns the establishment of the associative connection between organoleptic characteristics of alcohol (smell, taste) and different negative experiences induced by the KPT procedure (from suggested nausea to hallucinations accompanied by fear and horror). The establishment of such a connection is verified by the fact that practically all patients who were allowed to smell and taste alcohol during the ketamine session showed aversion, a pronounced emotionally negative reaction, and tried to spit the alcohol out or turn away from a piece of cotton moistened in it. One may suggest that this associative connection can be established very quickly, because, firstly, ketamine provides a means of increasing the patient's suggestibility (Sukhorukov, 1984), and, secondly, aethimizol promotes the rapid formation of stable associative connections and stimulates the consolidation of memory trace (Smirnov & Borodkin, 1979). Thirdly, the smell of alcohol induces very bright and personality-colored negative emotional experiences assimilated into the general picture of psychedelic experiences during the session. Because they are especially bright and expressive, and are incorporated into the whole personality-significant picture, these experiences are securely fixed in the emotional memory of patients and are stable and pronounced in the majority of them.

The second possible aspect of the therapeutic action of the method concerns a certain resemblance of a ketamine session to an individual hypnotherapy session aimed at establishing a set of sobriety. The resemblance consists in the existence of a certain, quite pronounced suggestive component in the psychotherapeutic influences applied during a ketamine psychedelic session. For a number of reasons, the efficiency of the suggestive influence during KPT is obviously substantially higher than during a hypnotherapy session. Among them, we should mention an increase in suggestibility due to ketamine and aethimizol effects on memory, and, in particular, a specific interaction between the suggestive influences applied and the patient's hallucinatory psychedelic experiences that, being included into the system of psychotherapeutic influences, attach an additional bright subject-picturesque emotional coloring, thus adding to the subjective significance and efficiency of the psychotherapeutic influences.

However, during the psychedelic session, the psychotherapeutic influences are not restricted by the suggestive component. Of great significance (and it is connected with the third aspect of the effect of the method), is that the administration of subanesthetic doses of ketamine (particularly in combination with analeptics) provides the possibility of a bilateral verbal contact (dialogue, conversation) with the patient. This adds to greater individualization and unique orientation, to each particular personality and makes psychotherapeutic influences more flexible. The psychotherapeutic process is also enhanced by a certain specific openness and frankness, and a decrease in self-control induced by ketamine. These factors allow one during the session to deal with barely realized, and even unrealized, concepts of the patients concerning their life problems, attitudes, relations, etc. This permits more successful facilitation of the processes of resolution of intrapersonality conflicts, transformation of the system of personality values and meanings and its orientation towards sobriety, and it makes the patient feel like a free and responsible person. We suggest that the psychotherapeutic influences addressed during the session (to various levels of psyche, including deep ones) participate in

establishing a set of sobriety and profound personal acceptance of the priority of sober life meanings and values. These factors promote the processes of personality growth and harmonization not only by means of the suggestive component, but also as a result of personality and existentially-oriented psychotherapy carried out during the psychedelic session. It is also important that the opportunity to address unaware (unrealized) concepts and motivations of the patients during KPT allows us to avoid, to a certain extent, the mechanisms of psychological defense and consciousness control affecting the psychotherapeutic process. This may essentially increase the efficiency of psychotherapeutic influences, but at the same time, requires particular caution in applying them.

The fourth aspect of KPT, unlike the first three, is related to the more active and, what is of great importance, more responsible participation of the patient himself/herself in the psychotherapeutic process. This active participation is generally required during the first (programming), and especially the final stages of the method. For example, one of the tasks of the final group session is to make a patient overcome, at least partly, infantile components of the pronounced transfer induced in him/her by the psychedelic session. During and after the session, it often seems to the patient that the psychotherapist is "a powerful, wise, and kind magician," in whom he/she sees hope and support. During the group discussion, however, the image of the psychotherapist is relegated to the background, and so the patient's attitude toward him/her becomes more realistic. Along with this, of even greater significance, is the influence of the other members of the group—their thoughts, feelings, desires, potentials, etc.

The main psychological content of the initial and the final KPT stages through which a patient develops an active, independent and responsible position, consists in the very formation and realization of a certain attitude towards reflection, comprehension, and especially, assimilation of experiences induced during the psychedelic session. In conformity to this attitude, experiences and visions represent concentrated and integral symbols of some profound personality problems that are in many respects connected with the alcoholic fate of the patient, his/her disease, and its various (as a rule, negative) consequences. To illustrate this, we shall now provide some examples of how the patients describe and interpret their experiences induced by the procedure at the final group session.

Patient P.Kh.:

I found myself inside a gigantic funnel whose mouth reached a terrifying height, and there, on the top, there was nothing A red capsule spiraled rapidly to the top along the surface of the funnel. And I was in this capsule, or even this capsule was myself, and it was me who was rushing towards nothing. But at the same time, I regarded myself in a detached spirit, as if I were split apart Abruptly, I found myself on the top of the tunnel. What I saw made me shudder with horror. A horrible, dark and cold abyss lay gaping in front of me. It was as if I were in open space, infinite and impossible to perceive. Each of my cells felt the horror of this abyss. One more turn and I would find myself in this obscurity and drop and drop endlessly Even after the procedure, when recollecting it, it made me feel uneasy But there was no other way to turn. Everything got mixed up, went around, and this whirl took me upward I felt that I was rushing at a high speed along some glass tunnel; through the glass I could see somebody's face and somebody asked me if I would drink. I answered that no, I wouldn't I came to the understanding that this gaping abyss, where I would be completely alone, would be my fate if I would not give up drinking.

Patient A.S.:

. . . sticky masses began to attack my body, to melt it. Fear invaded me. Everything around was in a whirl. One thing overlapped another. I felt the odor of alcohol. I felt

excruciating aversion, fear, presentiment of death. Bright objects replaced one another at a crazy speed, everything went round, and I went round too. It seemed to me that I would never get out of this nightmare, that I was to slowly and painfully die, that I, my entire self, would melt in this black mass, but my brain would go on working. That I would not feel, not think, not live, but suffer Some voice was talking about alcohol, I felt a strong aversion Everything I saw resulted from my hopeless life, my alcoholism—as if the trash accumulated in me during years and years went out of me during an hour. I do not want it to repeat, I am afraid of this nightmare I would never forget it

Often the negative experiences and visions induced by KPT were immediately associated with alcohol:

. . . I lost myself. I felt bewilderment because I lost myself, my body. Then it was death. Death, a calm flight downward through dense gray and white clouds. And suddenly rebirth. At somebody's command I saw a series of terrifying pictures, red background. They moved horizontally, picture by picture, independently of each other. They depicted the sad scenes of "the alcoholic life." Filth, broken bottles, corpses, "horrorful" faces, drunk grimaces. It was absolutely clear that this would be my future, the future of people like me (if not giving up drinking). The desire to tell everybody as soon as possible where this would lead us was also horrible to feel. Fast movement by some strange vehicle, a kind of train. And here, the disgusting smell of alcohol, then the oath of abstinence. Dissatisfaction, because everything should be done some other way. People must know about my oath and hear it (patient V.Z.)

A piece of cotton moistened in alcohol always induces in patients pronounced negative experiences and strong aversion:

. . . everything around me started rotating, I felt weightless and cold. I heard the doctor's voice: "Your fear is a result of vodka. It is vodka that has led you to the edge of the abyss." And I felt the disgusting odor of vodka that constantly accompanied the whole procedure (patient G.G.)

. . . I got to feel the smell of vodka. The aversion was so strong that it would be impossible to describe it (patient A.K.)

. . . When I was allowed to smell a piece of cotton moistened in alcohol . . . I felt a fear for myself, my future, my children. I felt I would go crazy or die of vodka . . . (patient D.F.)

Often, the hallucinatory experiences of the patients concerned their relatives, their wives, and children:

. . . Then I was asked: "Your daughter's name is Inna? Do you love her?" I was asked this several times. Then my daughter and I started flying over whitish-green rocks, there were strange creatures all around us; they were dreadful, vague. Again I was allowed to smell and taste vodka. My body fell to pieces; one of its parts flew with my daughter and the creatures. So I lost my daughter and found myself in blood. I was choking, spitting the blood out. Again I heard the voice, it told me that it all was due to vodka, that it was I who had let it be so I would not see my daughter, I lost her (patient S.L.)

. . . I saw my parents, wife, and children. They didn't approach me; they passed by, paying no attention to me (patient S.Ya. was afraid of losing his family)

The psychedelic experiences often involved the psychotherapist who tried to help the patient to reach something desirable, get out of the nightmare, etc.:

. . . I could see that the doctor helped me to get out of these flows Again thinking of my family. Certitude that I would fight my way to my people if I gave up drinking (patient A.K.)

The patients attached great importance to the specific contact with the psychotherapist established during the procedure:

. . . I remember the beginning of our talk with the doctor, when he asked me not to lose the contact with him. I've got such a feeling that the contact was there during the whole procedure and it was positive and favorable (patient V.G.)

Many patients mentioned that the words spoken by the psychotherapist during KPT often sounded unusual and especially powerful; they induced a pronounced emotional reaction:

. . . Most of all I was annoyed by the word "vodka," more exactly, two letters "dk." A very inconvenient combination, this "dk." And just this combination almost physically tortured my consciousness. (patient V.K.)

It is of interest that the psychotherapist somehow helped the patients to go from the horrible visions of their hallucinatory experiences to more clear and calm ones:

. . . They made me smell alcohol; it induced aversion. I remember crying: "I do not want," "I won't drink." Then I began to dissolve in time and space, only my brain remained and it rushed about some narrow labyrinth. Bright flashes of light, dead end, whenever you go. I felt a desire, an urge to get out of this space Then, something like a blackout, stop, flash, and a door to a new world In the doorway I saw a doctor and somebody else (patient S.L.)

We should mention that the patients' experiences induced by KPT were not always negative. Sometimes they had a positive emotional coloring; moreover, they were often associated with the sober life:

. . . Fast flight somewhere downwards. And at once I was going by some vehicle to a new, rose-colored world. Calm movement, warm bright yellow and pink colors. Pleasant feelings, interest, curiosity. It is probably that sober world where everything is all right, where there is no room but for smiles, calm movements, and joys of life. (patient V.Z.)

By alcohol and verbal influences one could, as a rule, turn such positive emotional experiences into negative ones.

It should be stressed that the patients of higher intellectual level and sensitivity had, as a rule, brighter, more mystical, transpersonal, colorful, diverse, and more personality-dependent experiences that profoundly impressed them. The following are some more examples of patients' reports:

Patient P.F.:

In my whole body, music starts playing synchronously with the switched-on tape recorder. I've got an irresistible feeling of being carried away, I try to resist it with all my forces, but can't. It's as if a train disappears in the tunnel and you are flying

after it into this black abyss and can't resist it. The music is deafening, your whole body obeys it; it is as if your body is pulsating in unison with the music. And you are flying in pitch-black darkness and at the same time you are hearing the doctor's voice telling you about aversion to alcohol, about sober life, and so on. Then, a flash of light; you are always moving and feel as if you are a ball among other balls rolling along the corridor lined with similar balls. Always dead ends, turns, flights and drops; turning into a cube with smoothed edges, the illumination and color of the corridor where you are rolling also change. Or, suddenly everything is ruined by a wave and you are going with the wave along the corridor. Then, everything bumps into something, the splash reaches the sky and you become a brilliant white point flying in space. Then you burst into thousands of splashes, and again turns, nooks, flights and drops, but always in a rush and always ahead, ahead Abruptly, everything starts going round, becomes a small point, this point turns into a gold hair and the whole Universe turns out to be hanging by it. You see it clearly. You are feeling the responsibility for everything alive and this depresses you. Then everything turns into silvery stars forming a dome and you are one of the stars. Then the whole dome collapses and turns into one dot. A gold splash appears against the blue background. It turns into a flower, the flower opens, and there, in the flower, I see my son, and somebody's voice is saying: "That is the most important."

Everything the patient experienced was then interpreted by him (with the help of the therapist) in order to fix the attitude towards sober life, family, responsibility for his son, etc.

Patient S.K.:

I felt that my legs did not move and the body started stretching and falling down at a crazy speed. The consciousness concentrated at one point and became a part of the scene. I was flying to infiniteness along something like channels that interlaced, joined one another (everything was brightly colored: orange, red). Gradually this crazy dance grew slower. I found myself in some closed space. At that moment an unconscious fear invaded me. Fear that I would never get out of this state, the state of being a part of something and not myself. The space where I was started filling with a solid foam. I was cornered. At the last moment, when I saw that I couldn't get away, that the space I occupied was the only free spot, I heard some splash and felt myself free. Everything around became understandable (I thought that it was impossible to live the way I had lived). My family came distinctly to my mind Now it was as if my consciousness was over the things that were under me. Everything down looked like some brown layers: as if a clot of brown dough scattered in the air and came down to the earth and covered it all over. It seemed to be my past life. Again a strong fear overwhelmed me, as I was pulled to this brown mess. All my self rose against it. I desired awfully to live, to live as everybody else, and never see this nightmare again. And my desire won. At this point I felt as if I opened my eyes and regained my sight. I saw a window, a green tree and the blue sky

Everything the patient had seen and felt in this case (as in all other cases) was discussed and interpreted by him with the help of the psychotherapist in order to work out and fix the attitude towards sober life.

Patient V.K.:

As soon as I had been brought to the state of unconsciousness, I started sliding in a curve of the vertical plane. The latter was distinct and represented a blue line

against the clearly visible and illuminated background. The thought: somewhere there is a point which is important for you, which you should not miss, as it is a matter of life and death. I slid for quite a long time, but I never met this point. Abruptly I found myself in a cave on the top of a high granite rock The rock rose high above the ocean that exactly resembled the thinking ocean of Lem's "Solyaris." The ocean was brownish-crimson, swirling, and looked like the upper parts of cumulus clouds, as seen from an airplane before the sunset. The cave had an entrance which, without any reason, seemed black. The ocean was several hundred meters below the cave, and I could distinctly imagine that sooner or later I would fall down and it would swallow me up. I didn't feel my body, but in the cave some ellipse-shaped, orange concentrate of thoughts, my thoughts, was pulsating. The thoughts were: the Universe is infinite in space and time, we are all mortal; the space, the ocean will always be, but thoughts will die and inexistence will come I felt hopeless and was surprised only at one thing: why this thought persists to live, to live endlessly. Several scenes of my life passed before my eyes. They were from my childhood and youth, everything in sad, reddish-brown colors. Several times the thought, but not the body, appeared at the exit of the cave and I could understand that I was to fall down into the ocean, but I would not fall down and again would return into the cave. And again hopelessness and the sense of doom All this went on for a very long time Gradually I began to come back to the reality It was not a dream and I didn't want to sleep; it was simply a desire to lie calmly. I was thinking of my experience and gloomily analyzing it—the questions I had been asked during the procedure . . . in my opinion, I had heard everything: about alcohol, the attitude toward it, its consequences, and about "the finale" and my feelings My general condition: perfect physical state, strangely depressed (without any reason) psychological state, and a desire to somehow analyze my past life, some dull ache at the thought about past years, some sharpened homesickness The attitude towards alcohol or anything similar: fear, a vague fear of everything that could disturb my distinct and clear consciousness and return it to something like what I had experienced, be it some drink or an injection or pills—it's of no importance. If only the sober state were not disturbed, not a little

It is important to mention that many patients, like patient V.K., stressed that KPT induced in them a pronounced negative attitude towards everything that could change their state of consciousness (whether alcohol or something else), a desire to maintain this state of clear consciousness, sobriety, serenity, and balance.

Some reports provide evidence that although the patients' experiences during the ketamine session were not immediately associated with alcoholism problems, they still produced some changes in attitudes of the patients towards their ego and the world around that were auspicious for a sober life. For example, the report of patient M.B. (courtesy Dr. O.V. Goncharov):

Now I know why both the head and the earth have the form of a ball The bends of the cerebral hemispheres look like mountains and rivers, basins and seas. There, inside me, are the zones of warmth and coldness, coolness (indifference?) and heat (passion?); and there are also (like in the cosmos) zones of exhausted atmosphere. I felt it physically, I lived through it. I made a voyage around the world and, at the same time, rolled down the mountains of my own subconscious. Sometimes you feel at ease there, but sometimes spaces suddenly fall down on you and you risk choking under their weight.

The voyage—it is the insight into your ego—it is when you feel that you are the Universe; it is the impossibility to turn away, to go away, because all this is you yourself and you are given nothing else—is, on the one hand, your confinement to yourself, but, on the other hand, it is a step into the cosmos which is in you yourself, however paradoxical you find it. If not the voyage, I would be always a can swollen with my own emotions, these aggressors eager to blow you and the whole world up. During the voyage and especially during the recovery period, I got the feeling that the world was flexible, plastic, ready to interact. And it was only up to you what you would build of its soft materials, responding to the glistening flow of your sensations. The voyage, it is at once a dream and the reality. It is the work of feelings and intellect. You are astonished at your own mediocrity and narrow-mindedness and at the cosmos that is also in you. You want to become different, spiritually richer, brighter, in order that your following voyage could bring you new impressions, could reveal new worlds. You'd like to penetrate further, deep into yourself and the universe, to test yourself once again Only after the voyage, you begin to discover with surprise that there are people that “know” everything as it is to be, begin to be indulgent to those who will never know, to sympathize with them. You are learning to distinguish many things and you get surprised at how you could have lived without this knowledge After some time, you are able to quietly enjoy the fact that you are a little different and that at any moment you can stop, look inside yourself and recall

All descriptions obtained from the patients' reports and the data of the concluding psychotherapeutic discussions were rather common in many ways (although rarely did a single subject experience them all): a violent movement in various kinds of tunnels and corridors, an experience of the separation of consciousness from the body, a symbolic experience of one's own death and rebirth, an identification with inanimate objects, a fear of a forthcoming global catastrophe, a sensation of losing one's ego, a suffering from one's loneliness, a rupture of relations with the family, a feeling of being lost in this vast and boundless Universe, a sensation of inability to take control over oneself, a feeling of the dependence on this terrifying chaotic violent movement, a fall, the horror of some closed space, the absence of an exit, and an unexpected exit and spiritual rebirth associated with it, a complex oceanic sensation of being dissolved and becoming a part of the Universe, of the Cosmos, a feeling of being connected with the Supreme Power, God, an awareness of the reality of the existence of other dimensions or other worlds (no less real than ours), etc. All these experiences were extremely sharp, intensive, and singular. Many patients reported the difficulties in expressing their sensations in words. Everything they saw took place in some bright, colorful, topologically complex, holographic world.

The presence of common themes in the above-described experiences, in terms of the transpersonal psychology paradigm, in our opinion, may provide evidence that during KPT a number of patients succeeded, firstly, in achieving not only the levels of condensed experience systems and archetypal images, but, in a majority of cases, the level of basic perinatal matrices and even of deeper transpersonal levels outlined by Grof (1985). Secondly, the patients managed, at least partly, to integrate a certain content of these levels of psyche, and to correlate it to their individual personalities. The changes in psychological tests (MMPI, the personality differential, the color test of attitudes, the spirituality changes scale) showed that the patients grew more self-confident, more confident of their abilities and future, less anxious and neurotic, and more balanced, emotionally open, and self-sufficient. We observed a decrease in the level of “self” disharmony, anxiety and internal tension, discomfort, emotional isolation, an improvement in self-assessment, and the appearance of a tendency to overcome passivity in one's personality. One could also observe a certain positive transformation of the system of life values and meanings and even some world view changes. In addition, after KPT, the patients, as seen from the comparison of isosemantic indices of the color test of attitudes and the personality differential, showed a decrease in the discord between verbal (realized) and nonverbal (unrealized) estimates in the system of personality attitudes. In terms of the transpersonal paradigm,

such positive psychological changes resulting from KPT may be considered, for example, as a result of the symbolic realization in consciousness and also symbolic resolution during the psychedelic session of some important, but suppressed internal conflicts and emotional problems of one's personality organized in systems of condensed experience. They may also be considered to result from the partial integration of the content of deeper psychic levels associated with basic perinatal matrices and transpersonal levels of psyche. This is to a large measure confirmed by the patients' statements during the ketamine session and by the data of their reports about the psychedelic experience written down after the session. In addition, we should mention that ketamine differs from other psychedelics in that even small doses quickly induce profound transpersonal states associated with the disappearance of one's sense of ego and the manifestation of deep mystical and religious experiences (Stafford, 1983). It is possibly this very property of ketamine induced psychedelic experience that promotes the growth of spirituality and a certain transformation of the system of life values and meanings that our studies indicate.

We should also mention that despite the presence of common topics in the patients' experiences, the experiences were always individually specific, and in all cases reflected in some generalized symbolic form the concrete aspects of the case history and personality problems of a given patient. All this, supported by a group psychotherapeutic discussion, helped the patients to form a notion of what they had seen during the session in some colorful symbolic form and to realize and emotionally live through their own personality problems that were in many respects associated with the alcohol dependence, with the negative aspects of their "alcoholic fate," and with the unrealizability of positive personality meanings of sober life. Thus, the patients attributed the negative nature of ketamine psychedelic experiences to their alcoholic past and not to the pharmacological influence of ketamine that only "released and showed for one's consciousness the dangerous consequences of one's own alcohol abuse in an integrated and concentrated form." This provided favorable psychological conditions for the patients to better feel, think over, and accept the personality meanings of sober life. Moreover, after KPT, the patients reported the sensation of "catharsis" resolution of a whole series of their psychological problems, first of all associated with alcohol dependence ("... What has accumulated in me, i.e., everything associated with drinking, burst out of my consciousness, my soul. I feel relieved" –patient V.S.). Such a reflection and psychedelic experience interpretation are undoubtedly important mechanisms of preventing anosognosia, ruining a pattern of alcohol abuse, forming and fixing a set of sobriety, and actualizing value-and-meaning imperatives of the latter.

It is of interest that the study of content analysis data from the reports of 108 alcoholic patients whose personality peculiarities had been defined by MMPI, showed a whole series of statistically reliable correlations between the indices of some MMPI scales and the content of the patients' psychedelic experience. This allows us to conclude that the nature and content of the experiences during the ketamine psychedelic session are, to a certain extent, determined by personality features of the patients. On the other hand, we found a correlation between the content of ketamine psychedelic experience and the MMPI profiles changes induced by KPT. This result indicates that the features of psychedelic experience influence the nature of personality changes induced by KPT. This study also revealed a significant positive correlation between the emotional coloring of psychedelic experiences and the clinical KPT efficiency (outcome): more negative experiences during the ketamine psychedelic session resulted in longer remission periods. This shows the importance for sobriety of the ketamine induced profound experience and realization by patients of the negative aspects of the "alcoholic fate." The KPT induced sharp experience and reflection on the negative aspects of the suppressed are certainly an important means of profound awareness of the negative sides and consequences of alcohol abuse. The last point is of special importance in preventing anosognosia—one of the major psychopathological phenomena of alcoholism, and in many respects related to the "psychological defense," the mechanisms of information suppression in consciousness (Gaboyev, 1989). Due to these mechanisms, a patient either completely denies his/her disease, or the internal picture of his/her disease turns out to lack the emotional component and becomes indifferent to the patient's personality. In this connection, as Gaboyev (1989) reasonably suggests, the task of a psychotherapist is to "introduce" into

the consciousness of a patient the suppressed concepts of various symptoms of his/her disease and their realization, thus, overcoming the alcoholic anosognosia. Our studies show that KPT may successfully contribute to the solution of this task.

In the framework outlined above, there is much promise in an attempt to describe some psychological KPT mechanisms from the psychoanalytical standpoint. In our opinion, a psychedelic session may be considered, to some measure, as a kind of dream and, consequently one can apply psychoanalytical dream theory here. The central thesis of the theory is, as is well-known, the statement that a dream is the realization of a desire. Moreover, even the so-called punishment-dreams are also the realization of the desires and intentions of the criticizing, censoring, and punishing stage of the psyche, i.e., the Super-Ego (Freud, 1976). It is possible that the above-mentioned sense of "relief" and comfort that follows a psychedelic session is the consequence of the realization and satisfaction of an unconscious (completely or partly) desire of the Super-Ego to "criticize" the alcoholic past and alcohol dependence of the patient and punish him/her for it. Moreover, the circumstance that the content of this desire is then realized, admitted, and emotionally accepted by the patient (for example, during the final (third) stage of the KPT treatment) is of high therapeutic value, inasmuch as the mechanisms are similar to those of the conventional psychoanalytical analysis of dreams. The result is the enhanced power of the ego, both from the standpoint of a more adequate and complete reflection of reality, and from the standpoint of more efficient control over the adequate behavior.

However, the psychedelic experiences a patient has during KPT certainly are not equivalent to normal dreams, because they are induced by special external factors, i.e., pharmacological and psychotherapeutic ones. In our opinion, the psychedelic experiences during KPT may be considered as a kind of externally facilitated, controlled dreams. It is important to control and manage the dreams to increase their essential, functional (therapeutic) value as opposed to the usual occurrence of dreams. It is rather difficult to imagine that the usual dream of an alcoholic, be it a mere nightmare or one that is later thoroughly analyzed (i.e., realized as to its concealed content), may produce in a patient equally essential changes, i.e., the kind that are induced by the KPT procedure with respect to an attitude to sober life. Rather, it is probably that the pharmacological and psychotherapeutic facilitation and control of a psychedelic "dream" tends to somewhat artificially enhance an adequate criticizing and punishing intention of the Super-Ego that is available (but partly suppressed) in a patient, making it more intensive, global, and concentrated. Thus, one may suppose that during KPT the above psychodynamic therapeutic mechanisms are enriched and enhanced, owing to factors (mechanisms) analogous to hypno-suggestive therapeutic ones. It is the hypno-suggestive therapy that as a rule influences the changed state of consciousness to directly induce changes in the subconscious structures of the psyche, and in particular, the Super-Ego.

According to the above considerations, KPT represents not only a transpersonally oriented method of psychedelic therapy, but also a product of the unique combination of the psychodynamic and hypno-suggestive therapeutic approaches. This triple synthesis, as indicated by our data, turns out to be quite successful in the treatment of alcohol dependence.

Treatment of Drug Dependency and Neuroses

Separate clinical observations provide evidence that KPT may be used in treating not only alcohol, but also drug dependence. In the latter case, it is more reasonable to inject smaller doses of ketamine, to allow for a constant verbal contact (rapport) with a patient. With the aid of such a procedure, therapists, as a rule, succeed in forming in a patient a set for drug rejection. To illustrate this, let us cite the report of a patient, O.M., a heroin addict and a physician by profession, who after KPT had a long and stable remission:

It is rather difficult to describe everything in words. But I'll try. At first, a sensation of gradual separation from the body. In short, such a feeling that you are but a bundle of thoughts, as your pure individual self, and this "self" turns out to be in a space constantly changing its dimensions and shape. All thoughts and feelings are suppressed. Self-control is practically impossible. In this space, you can periodically see the faces of the therapists. The faces vary in their shape and size, but are recognizable. Periodically you can hear a voice. The voice is rather agreeable, perhaps because it is the only thread that connects consciousness with reality. The impression is that of a voice that freely walks among your thoughts, and moreover, is good at finding its way among them. The pauses between questions are very long; meanwhile you've got a feeling of a weightless flight. There are practically no thoughts or you are thinking over the last question. Now, more concretely about the questions. The first mention of your wife produces a bright positive emotion. Then, the questions about the heroin. It is very unpleasant, agonizing. Most unpleasant, even disgusting, is being shown a syringe filled with heroin. And then, when it is emptied, an obvious relief . . . Gradually, your body returns. The vacuum with faces turns again into a room with people . . . After the procedure, any thought about heroin causes some unpleasant heaviness in both the back and the crown of the head that disappears immediately after you have switched to other thoughts.

One should, however, mention that it is necessary to be very careful in applying KPT to drug addicts to exclude the possibility of ketamine abuse. At the same time, it is of great importance to recognize that the ketamine session could induce in the patients deep psychedelic experiences in order to achieve a conspicuous transformation in the system of a personality's life values, meanings, and purposes, even towards a worldview that would stimulate life without drugs.

In conclusion, we would like to underscore that the potential of ketamine psychedelic therapy is not restricted to the problems of drug and alcohol dependence. For example, at present, according to the data of our pilot research, ketamine psychedelic therapy turned out to be quite efficient in treating neurotic disorders. (I. V. Kungurtsev also took part in the study of ketamine therapy of neuroses.) This research indicated a differential efficiency of ketamine psychotherapy in relation to the various forms of neuroses. Specifically, psychedelic therapy turned out to be most efficient in treating neurotic depression, and less efficient in treating obsessive-compulsive or phobic neuroses. Hysterical neurosis appeared to be most resistant to psychedelic therapy.

We carried out a special research project on the influence of ketamine psychotherapy on the psychosemantic fields of the patients with neurotic disorders. For this purpose, we developed the special repertory grid tests (Francella & Bannister, 1977). The repertory grids were arranged so that their elements were replaced by various aspects of one's "ego" ("Me now," images of self in the future and in the past, etc.) and also by "significant others." The constructs were preset to describe the characteristics of a person's psychological state from the standpoint of humanistic and transpersonal psychology. We employed two techniques of filling the repertory grids. According to the first (conventional) one, a patient placed an element at a certain point of the calibrated scale preset by the construct poles. The second one was specially developed by us to measure changes in nonverbal (and in this sense, less realized) psychosemantics, and included the following procedures: First, a patient arranged 8 colors of the Lüscher test in the order of correspondence (similarity) to each of the repertory grid elements (from the most similar, suitable color to the most different, unsuitable one). Then the patient arranged the same colors in the order of correspondence to the poles of each of the constructs. Then, comparing the color positions in the two allotments (the first one by the correspondence to a certain element and the second one by the correspondence to the poles of a certain construct), one could quantitatively estimate the closeness of these allotments and, thus, the closeness of this element to the poles of the given constructs. The second ("color") technique allowed us to

obtain nonverbal (and to a considerable extent, unrealized, unaware) assessments of the elements in terms of given constructs. The results of this research indicated that after ketamine-assisted psychedelic therapy the neurotic patients showed, as a rule, positive changes in the assessments of their individual self as well as of significant others, from the standpoint of the humanistic and transpersonal paradigms. These changes concern both verbal and nonverbal assessments and indirectly provide evidence of a certain reduction of neurotic symptoms.

Thus, in conclusion, ketamine-assisted psychedelic therapy may be successfully used in treating various psychic diseases: alcohol dependence, some types of drug dependence, and some neurotic disorders. Moreover, ketamine-assisted psychotherapy can be successful in complicated cases resistant to more usual treatments. This success may reflect the fact that ketamine psychedelic therapy is associated with the influence on various levels of the mind, including the deep ones.

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