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*How are hemodialysis patients treated in the Lublin Region – based
on the selected issues of diagnosis and therapy*

In Poland, the last decade brought about tremendous progress in the field of dialysis therapy. This progress was visible not only in the increased number of dialysis patients but also, following the world trends, it concerned the quality of therapeutic methods used (12). The most relevant achievements introduced in this period include the use of bicarbonate fluids, polysulphonic dialyzators, wider use of erythropoietin as well as improved technical parameters of the devices used during extracorporeal dialysis – “artificial kidneys”, equipment for water treatment and for reutilization of dialyzers (2).

Moreover, a dynamic development of renal-replacement treatment methods alternative to hemodialyses was observed, among which all kinds of peritoneal dialyses have taken the lead (11). General progress in pharmacotherapy in these years should also be taken into consideration, which in the treatment of dialysis patients mainly affected the quality of management of hypotension and disorders in bone balance (1, 5).

The therapeutic advances were accompanied by a real breakthrough in achieving optimum dialysis treatment. At present, the methods assessing the adequacy of renal-replacement treatment using, for example, kinetic modelling of urea became standard procedures for evaluating the quality and effectiveness of therapy (4, 5).

As expected, all this resulted in a substantially prolonged survival of dialysis patients, which is also consistent with the world-wide trends (9, 10).

Therefore, in the recent years, an improvement of the quality of life of dialysis patients has become the main purpose (7). This quality may be defined as a state of maximum attainable mental and physical well-being in the presence of underlying and associated diseases together with the way of chronic treatment – according to the WHO definition of health (6).

At present, the factors which have the biggest effects on improvement of "the quality of life" of dialysis patients are well known, and many of them are directly related to the aforementioned advances in dialysis technique and pharmacotherapy (7, 12, 13). The effectiveness of dialyses may be calculated by means of the well recognised mathematical models using objective biochemical and clinical parameters of the patients, yet precise determination of "the quality of life" level is actually impossible (4, 5).

Therefore, all kinds of self-evaluation tests, including SGA (subject Global Assessment) test have become increasingly popular (7, 13). Although still far from being perfect such tests may be a useful tool enabling the therapists to find out quite accurately what the psychophysical state of their patients is. Moreover, in connection with standardization of therapeutic management introduced into the treatment of renal diseases and renal replacement therapy, the tests of satisfaction of patients chronically treated with dialyses in a particular centre are being designed (13).

The present paper concentrates on the problems of providing the patients treated in the analysed hemodialysis centres with proper medical care. Although it concerned individual patients, the questions of the analysis were answered by the staff of dialysis centres. The questions contained in the questionnaire were designed to be rather clinical than statistical in character thus the opposite of the questions of surveys carried out for the needs of overwhelming standardization.

METHODS

The research was performed by means of an elaborated questionnaire and the data were collected by the interviewers. An interviewer was always one of the authors, which guaranteed the reliability and competence in filling in the questionnaire and, on the other hand, provided full anonymity of the patients in relation to supervisors. Every study was carried out in maximum isolation of the person answering the questions.

The questionnaire consists of two parts: one with the questions for patients and another one with the questions concerning the patients but addressed to middle and highly qualified medical staff. The first part included only the closed questions, often multiple-choice or multi-step ones, sometimes their combination. The second part is also composed of open questions but not related to the examined person. The present study concerns only the questions addressed to the staff of dialysis centres, so mainly the second part of the questionnaire.

RESULTS

The questions addressed to the medical staff of dialysis centres were included in the further part of the questionnaire. They concern the selected issues in the field of medical

Table 1. Compilation of dialysis centres and number of patients

Hemodialysis centre	No of patients
Kraśnik	47
Janów Lubelski	43
Puławy	55
Sandomierz	46
Tomaszów Lubelski	21
Zamość (Voivodeship Hospital)	33
Zamość (The Hospital named after John Paul II)	43
TOTAL	288

care for the patient and are focused on diagnostic examinations performed in the individual centres as well as on monitoring and treatment of the skeletal system disorders. A part of results was presented graphically to achieve legibility and imagery. The remaining results were presented in tables, and also in this case legibility of their presentation was our main goal.

The results are discussed in the sequence corresponding to the importance of the issues related to the quality of dialysis therapy carried out in the centre.

Figure 1 depicts the answers to the question whether the Kt/V examination of dialysis patients is performed in the centre. Table 2 illustrates the frequency of biochemical tests. Figure 2 presents the suggestions about the use of erythropoietin while Table 2 shows the markers used to define the needs for erythropoietin. Table 3 presents the suggestions concerning the use of active metabolites of vitamin D in hemodialysis patients and procedures of administration. With respect to earlier data, Table 4 shows the biochemical parameters of the serum which are monitored. Table 5 describes the range of regular follow-ups of Viral Hepatitis while Table 2 shows which markers are then monitored. Table 6, among other things, answers the question whether the cytomegalovirus diagnosis is done and shows the frequency of selection for interferon treatment; additionally it deals with the question whether dialysis patients are subjected to genetic examinations. The diag-

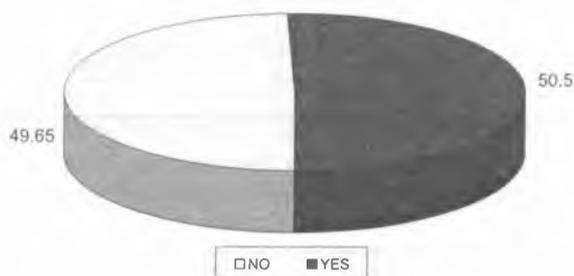


Fig. 1. Is the Kt/V examination done?

Table 2. Frequency of biochemical tests and other parameters determinations during EPO and VH prophylaxis

Biochemical test			
1 x a month	1 x 2 months	every 3 months	less frequently
73.96 %	12.15 %	13.19 %	0.69 %
Indices determined during EPO			
iron	ferritin	transferrin	saturat. of transferrin
52.78 %	29.17 %	20.14 %	20.14 %
Indices for monitoring VH			
antigen	antibodies	antibodies + antigen	PCR
16.66 %	32.64 %	50.69 %	11.46 %

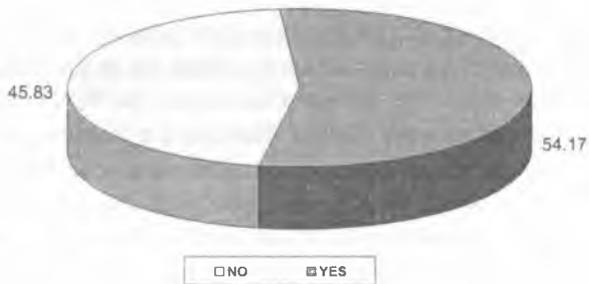


Fig. 2. Is EPO administered?

Table 3. Are active metabolites of vitamin D administered and how?

	YES	NO
	33.33 %	66.66 %
How		
	bolus	constantly small doses
	26.04 %	73.96 %

Table 4. Frequency of monitoring selected indices during vitamin D active metabolite administration

Ionized Ca	Total Ca	Bound Ca	Phosphorus	Alk. phosphatase	PTH
13.89 %	36.8 %	25.35 %	10.42 %	10.07 %	7.99 %

Table 5. Are virus hepatitis markers monitored?

HAV	HBV	HCV
13.2 %	98.26 %	95.83 %

Table 6. Are CMV diagnosis and genetic examinations performed? Were the patients selected for interferon treatment due to VH?

	YES	NO
CMV diagnostics	27.78 %	72.22 %
Genetic examination	90.97 %	9.03 %
Interferon treatment	17.01 %	92.99 %

Table 7. How often are hormone examinations done?

According to the need	Regularly	Not done
91.32 %	0.35 %	8.33 %

Table 8. How and how often are dialysers reutilized?

YES	NO
97.02 %	2.08 %
Manually	Automatically
28.82 %	71.18 %

Table 9. Average number of dialyser reutilization

2 x	3 x	4 x	5 x	more
2.84 %	12.15 %	10.64 %	28.01 %	44.33 %

Table 10. Who performed arteriovenous fistulas?

Surgeon	Internist	Together
93.4 %	1.04 %	19.79 %

nostic examinations are also described in Table 7 illustrating the frequency of hormone examinations. Tables 8 and 9 are concerned with the problems of dialysers reutilization – frequency, methods. Table 10 defines the surgeons who performed the vascular anastomoses in the analysed patients.

Not all the questions were presented in figures or tables. Some were neglected – when almost all answers were identical or the questions concerned technical problems, e.g. water treatment.

DISCUSSION

The results of the studies awoke some reflections about the quality of life of dialysis patients in the selected dialysis centres of our region (see Table 1). Unfortunately, the reflections are not always optimistic. Starting with Figure 1, it can be seen that among the analysed patients only about 50% were subjected to Kt/V examinations. It seems definitely not enough and much should be changed in the nearest future to fulfil the precisely defined standards of hemodialysis treatment (4, 5, 13). The last comment concerns also other issues discussed below.

As for the regular biochemical follow-ups in hemodialysis patients, the situation looks better, although over 13% of patients undergo them once every 3 months. The use of erythropoietin looks similar – over 54% of patients are treated with erythropoietin, which in our medical conditions could be accepted as a good result, however it is well known that not all needs are fulfilled (12, 13). The frequency of iron determinations while using erythropoietin is found to be definitely poor. The low percentage of ferritin or transferrin determinations may be explained by their high costs and poor availability but the iron determinations performed in slightly more than 52% of cases is absolutely insufficient. In almost a half of patients, erythropoietin is administered "blindly", which means that the levels of iron and its transport proteins may be low, which greatly limits the effectiveness of therapy (7, 9). Can we afford such a waste?

Evaluating the use of active metabolites of vitamin D, several variants should be taken into account: firstly, the data may concern a relatively young population of dialysis patients or these patients show surprisingly high resistance to calcium-phosphorus balance disorders and finally the diagnosis of these disorders is insufficient. Having analysed the data which refer to monitoring the calcium-phosphorus balance ratios (Table 4) the authors are inclined to choose the third variant. The way of administering active metabolites of vitamin D additionally reveals the highly conservative character of treatment of renal bone diseases and confirms that much should be changed in this respect (1, 8). A quite good situation is found in Viral Hepatitis diagnosis. Both the range of diagnostic procedures and examinations performed with them seem to be sufficient (3, 14, 15).

CONCLUSIONS

The authors are fully aware that on the basis of even the best questionnaire, the far-reaching conclusions about the quality of medical care provided in dialysis centres cannot be drawn. Their subjective feelings about this issue and the clinical state may not fit the conclusions about the

evaluated dialysis centre based only on this questionnaire, especially that the scope of questions does not include all aspects of dialysis therapy.

Therefore, the conclusions will be more partial than general in character – will refer to the particular questions – as it was presented in the discussion. Despite this, we still believe that the analysis used in our studies may well illustrate our assumptions and give a real picture of the way the patients are subjected to hemodialyses in the Lublin region.

To obtain more general conclusions and evaluation, the range of studies should include the remaining dialysis centres of our region, moreover, it seems worthy to repeat them in the future.

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SUMMARY

The aim of the paper was to answer the questions about the quality of life of dialysis patients treated in the selected dialysis centres of the Lublin region in relation to the recent quantitative and qualitative breakthrough in dialysis therapy in Poland. The studies including 288 patients of 7 medium-sized centres were performed using the questionnaires filled in by interviewers. The present paper describes the results of analysis of the questions addressed to the centre staff but concerning the way of treatment of a particular patient.

The results show that to follow the world-wide trends, chronic dialysis treatment should be of an optimum quality and the methods evaluating it widely propagated. Moreover, much is to be done in the field of the latest diagnostic procedures and therapy of dialysis patients. On the other hand, the technical aspects of dialysis therapy look quite good.

To evaluate the changes in the aforementioned processes more accurately, it should be worthy to broaden the studies including the remaining centres of our region and to continue them in the future.

Jak leczymy pacjentów hemodializowanych w regionie lubelskim – na podstawie
wybranych zagadnień diagnostyki i terapii

Celem pracy była próba odpowiedzi na pytania o jakość dializowania pacjentów leczonych w wybranych stacjach dializ regionu lubelskiego w świetle dokonanego w ostatnich latach przełomu ilościowego i jakościowego w zakresie dializoterapii w Polsce. Badanie objęło grupę 288 chorych w siedmiu ośrodkach średniej wielkości, a zrealizowane zostało za pomocą kwestionariusza wypełnianego z pomocą ankietera. W niniejszym opracowaniu zawarto wyniki otrzymane po analizie odpowiedzi na pytania skierowane do per-

sonelu danej stacji dializ, ale odnoszące się do sposobu leczenia konkretnego pacjenta. Uzyskane wyniki badań wskazują na to, że aby podążać za trendami ogólnoświatowymi, należy położyć większy nacisk na optymalizację procesu leczenia powtarzalnymi hemodializami, a w ślad za tym na upowszechnianie metod służących ocenie tego procesu. Wiele jest również do zrobienia w zakresie najnowszych metod diagnostyki i terapii dializowanych pacjentów, za to w odniesieniu do technicznych aspektów dializoterapii sytuacja wygląda dość dobrze. Aby móc pełniej oceniać zmiany zachodzące w tych procesach, wydaje się celowe rozszerzenie przeprowadzonych badań na pozostałe ośrodki regionu, jak również kontynuacja ich w przyszłości.