DESCRIPTION OF INTERDIALYTIC WEIGHT GAIN (IDWG) CHRONIC KIDNEY DISEASES (CKD) PATIENTS WHO HAVE HEMODIALYZED THERAPY

Nur Isnaini

Departement of Nursing, Universitas Muhammadiyah Purwokerto, Indonesia
nurisnaini@ump.ac.id

RESUME

Fluid intake and increased BB in Chronic Kidney Disease patients must be taken seriously because increasing fluid intake can aggravate kidney work. Interdialytic Weight Gain (IDWG) is an increase in fluid volume which is manifested by an increase in body weight. The method that use in this study is quantitative research and used cross sectional approach. There were 86 respondents who underwent hemodialysis therapy. The result shown that characteristics of respondents out of 86 most male respondents are 56 (65.1%) the most age range in the range 46-55 years ie 28 (32.6%), elementary school education 37 (43.0%) not working 36 (41.9%). Weight gain between the two dialysis times: the highest IDWG with 51 respondents (59.3%) and the lowest weight gain between dialysis times is in the high IDWG category which is 7 respondents (8.1%) and for the mild IDWG category, 28 respondents (32.6%) were obtained. The most interdialytic Weight Gain is in the medium IDWG category, and on average all HD patients experience an increase in BB from the first HD to the second HD.

Keywords: Hemodialysis; IDWG; Overview.

Introduction

Chronic Kidney Diseases (CKD) is a condition of chronic kidney function decline, progressive and irreversible progression that causes impaired metabolic balance, fluid and electrolytes (Smeltzer & Bare, 2013). Hemodialysis therapy is one of the therapies done to help the kidneys remove the end result of the body’s metabolism because the kidneys cannot carry out their functions as a result of damage to the nephrons which are functional organs of the kidney. (Illic et al, 2018) states that the parameters of hemodialysis therapy can be the value of creatinine in the blood.

According to the World Health Organization (WHO) states that the growth in the number of patients with kidney failure in 2013 has increased 50% from the previous year. Incidence in the United States the prevalence of kidney failure increased by 50% in 2014. Data shows that every year 200,000 people in America undergo hemodialysis due to chronic kidney disorders.
meaning that as many as 1140 in one million Americans are dialysis patients (Widyaastuti, 2014). Patients suffering from end-stage chronic kidney disease, ie Glomerular Filtration Rate (LFG) of less than 15 ml/ min require kidney replacement therapy in the form of hemodialysis, peritoneal dialysis or kidney transplantation (Suwitra, 2014).

Fluid intake and increased BB in CKD patients must be taken seriously because increasing fluid intake can aggravate kidney work. Interdialytic Weight Gain (IDWG) is an increase in fluid volume that is manifested by an increase in body weight. IDWG is the basis for knowing the amount of fluid entering during the interdialytic period. IDWG that can be tolerated by the body is no more than 3% of dry weight, that is body weight without excess fluid. The patient's body weight is routinely measured before and after hemodialysis to determine the condition of fluids in the body, then IDWG is calculated based on dry weight after hemodialysis (Neumann, 2013). A high IDWG will further aggravate kidney work and be at greater risk of death compared to the DWG condition which is at a low value (Hecking et al, 2018).

(Langner, 2019) mentioned that fluid management is one of the benchmarks of success of hemodialysis. The study showed that rapid fluid removal, extracellular volume expansion and interdialytic weigh gain (IDWG) were risk factors for morbidity and mortality in hemodialysis patients. Success The action of hemodialysis is based on 2 pillars namely limitation of fluid and removal of metabolic waste products from the blood by using a dialysis machine. regulate extracellular fluid volume and osmolarity. The volume of extracellular fluid must be regulated properly, because it can affect a person's blood pressure. (Istanti, 2011). The regulation of osmolarity can affect cells so they can contract, swell or remain normal. The body regulates the volume of extracellular fluid through the amount of salt in the body, namely through the kidneys and the hormone that plays a role is aldosterone, while the osmolarity regulation of extracellular fluid is done by regulating the amount of water, namely through thirst mechanism and the hormone that plays a role is vasopressin. Calculation of fluid balance is Intake / inlet fluid = Output / outflow + IWL (Insensible Water Loss) (Sherwood L, 2013).

Beerendrakumar et al (2018) states that intense education and counseling is needed for patients and families in order to manage fluid intake always in a balanced condition. Recommended daily fluid intake in patients is limited to as much as "insensible water losses" plus the amount of urine expelled so that the body is always in a balanced condition. (Flythe, Assimon, & Overman, 2017) also mentioned that the increase in IDWG had an impact on fluid osmolality which is very closely related to the incidence of intra-dialectic hypertension. Cabrera et. al.,(2015) stated that the increase in IDWG can cause edema and hypertension, left ventricular hypertrophy, and also related to the length of life of patients. Hemodialysis is performed to withdraw the patient's fluid until it reaches the patient's dry weight target.

Interdialytic Body Weight Gains (IDWG) is an increase in fluid volume that is manifested by an increase in body weight as a basis for knowing the amount of fluid that enters during the interdialytic period. Patients are routinely measured for weight before and after hemodialysis to determine the condition of fluids in the patient's body, then IDWG is calculated based on dry weight after hemodialysis. Some psychosocial factors are strongly associated with an increase in IDWG such as demographic factors, fluid intake, thirst, social support, self efficacy and stress.
Based on this background the researchers felt it was necessary to look at the picture of Inter Dialytic Weigth Gain of CKD patients undergoing Hemodialysis therapy to give an idea of how to regulate fluid intake of CKD patients in maintaining fluid balance in patients at BMS Regional Hospital.

**Theoretical Framework**

This study refers to research (Flythe et al., 2017) which states that chronic damage to the kidneys will affect the end product of protein metabolism that is normally excreted in urine buried in the blood. Increasing body weight between dialysis times is a very important concern because it will affect the adequacy of HD therapy. Pre-hemodialysis BW measurements are the patient's body weight measured before the second hemodialysis. BW post hemodialysis I is the patient's body weight measured after undergoing hemodialysis I.

**Research Methodology**

In this study using a quantitative method with a descriptive research design by giving an overview of the characteristics of respondents and the condition of increasing BB from Post Hemodialysis I with Pre Hemodialysis II or called IDWG. Hemodialysis. This research will be carried out in the Hemodialysis Room of Banyumas District Hospital in December-July 2018. Population of this study is chronic kidney failure patients undergoing hemodialysis. The number of patients undergoing HD therapy in BMS Hospital in 2018 was 190 respondents. The sampling technique used in this study is Non Random Sampling with Purposive Sampling technique which is a sampling specifically based on the research objectives of 86 respondents.

Inclusion criteria are subjects who will represent the research sample and who are eligible to be sampled. Inclusion criteria of this study were kidney failure patients undergoing hemodialysis therapy at Banyumas General Hospital, kidney failure patients undergoing hemodialysis with compositional awareness level, patients undergoing routine therapy and according to the Hemodialysis therapy schedule. Exclusion criteria are research subjects who do not meet the requirements to be sampled. Exclusion writers from this study were chronic kidney failure patients who did not undergo hemodialysis, chronic kidney failure patients who were undergoing hemodialysis that had decreased consciousness and patients who refused to become respondents.

The observation sheet used in this study was the measurement sheet for the hemodialysis patient's body weight. This sheet is used to find out the respondent's IDWG value, that is by researchers weighing the respondent's weight after hemodialysis I and weighing again during pre-hemodialysis II after obtaining data then the researcher looks for the respondent's IDWG value (%). Univariate analysis of each variable from the results of the study to produce a frequency distribution and percentage (%). Data were analyzed using descriptive statistics to get in the form of tabulations, by entering all the data then processed by descriptive statistics used to report results in the form of frequency distributions and percentages of each item.
DESCRIPTION OF INTERDIALYTIC WEIGHT GAIN (IDWG)

1. Characteristics of respondents

Table 4.1.

Characteristics of respondents based on gender, age, education, employment status, illnesses that have been suffered and length of time undergoing HD

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>56</td>
<td>65.1</td>
</tr>
<tr>
<td>Female</td>
<td>30</td>
<td>34.9</td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-25</td>
<td>2</td>
<td>2.3</td>
</tr>
<tr>
<td>26-35</td>
<td>8</td>
<td>9.3</td>
</tr>
<tr>
<td>36-45</td>
<td>14</td>
<td>16.3</td>
</tr>
<tr>
<td>46-55</td>
<td>28</td>
<td>32.6</td>
</tr>
<tr>
<td>56-65</td>
<td>23</td>
<td>26.7</td>
</tr>
<tr>
<td>&gt;65</td>
<td>11</td>
<td>12.8</td>
</tr>
<tr>
<td>Education:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School</td>
<td>37</td>
<td>43</td>
</tr>
<tr>
<td>Junior High School</td>
<td>13</td>
<td>15.1</td>
</tr>
<tr>
<td>Senior High School</td>
<td>26</td>
<td>30.2</td>
</tr>
<tr>
<td>Academician</td>
<td>9</td>
<td>10.5</td>
</tr>
<tr>
<td>Didn't school</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Occupation:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment</td>
<td>36</td>
<td>41.9</td>
</tr>
<tr>
<td>Farmer</td>
<td>10</td>
<td>11.6</td>
</tr>
<tr>
<td>Government employee</td>
<td>8</td>
<td>9.3</td>
</tr>
<tr>
<td>Enterpreuner</td>
<td>10</td>
<td>11.6</td>
</tr>
<tr>
<td>Housewife</td>
<td>21</td>
<td>24.4</td>
</tr>
<tr>
<td>Driver</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Long Live HD therapy:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>21</td>
<td>24.4</td>
</tr>
<tr>
<td>&gt;1 year</td>
<td>65</td>
<td>75.6</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

Based on table 4.1 it can be explained that the characteristics of respondents undergoing hemodialysis at Banyumas Regional Hospital of the total 86 samples were at the age of 46-55 years which was as many as 28 (32.6%), the most gender categories were male sex ie 56 respondents (65.1%) and women as many as 30 respondents (34.9), the category of elementary education is as much as 37 respondents (43.0%), the highest category of employment status is not working, as many as 36 respondents (41.9%), the category of disease that had suffered the most was hypertension as many as 39 respondents (53.5%), undergoing long period of Hemodialysis <1 year as many as 21 respondents (24.4%) and for the category of respondents who underwent long period of Hemodialysis> 1 year as many as 65 respondents (75, 6%).

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Based on the education category, it was stated that the majority of respondents' education was elementary with 37 respondents (43%). According to (Yuliaw, 2009) patients who have higher education will have broader knowledge so as to enable patients to control themselves in overcoming the problems faced, have high self-confidence, experience, and have precise estimates of how to cope with events, easy to understand about what is recommended by health workers, and can reduce anxiety so that it can help the individual in making decisions.

Based on the occupational category, it was found that the majority of respondents did not work, namely 36 respondents (41.9%). Patients had to adjust to the physical changes in conditions, such as nausea, chills, vomiting, headaches, insomnia, back pain, hypotension, itching, etc. The limited physical condition of the patient can result in the patient's productivity and activities being hampered, such as barriers to social activities (Smeltze & Bare, 2013).

Based on the history category of the disease that had suffered most of the respondents had a history of hypertension, as many as 39 respondents (53.5%). Hidayati (2008) reported that hypertension sufferers who had experienced hypertension for 1-5 years had 13 times the chance of developing chronic kidney disease for those who did not have hypertension for 6-10 years, 24 times the chance of having chronic kidney disease than those who did not have hypertension. And if hypertension is more than 10 years, the chance of experiencing chronic kidney disease is 34 times that of respondents who do not suffer from hypertension.

Results of a long study undergoing hemodialysis showed that some respondents had a length of hemodialysis for >1 year, which was 65 respondents (75.5%). This study is in line with research conducted by Alfiyanti (2014) which states that most of the respondents had a longer period of hemodialysis because the respondent was diagnosed with CRF earlier, so that treatment of CRF can be done earlier, one of the treatments is by conducting hemodialysis as a replacement for his damaged kidney.

2. Interdialytic Weigh Gain (IDWG)

<table>
<thead>
<tr>
<th>Levels of IDWG</th>
<th>Frekuensi</th>
<th>Presentase (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild IDWG</td>
<td>28</td>
<td>32.6</td>
</tr>
<tr>
<td>Moderate IDWG</td>
<td>51</td>
<td>59.3</td>
</tr>
<tr>
<td>Severe IDWG</td>
<td>7</td>
<td>8.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>86</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Based on table 4.2 it can be explained that the category of weight gain between the two dialysis times (Interdialytic Weigh Gain is the highest IDWG with 51 respondents (59.3%) and the weight gain between the lowest dialysis times is in the high IDWG category which is 7 respondents (8.1%) and for the mild IDWG category there were 28 respondents (32.6%). Interdialytic Weight Gain (IDWG) is an increase in fluid volume manifested by weight gain. IDWG is the basis for knowing the amount of fluid entering during the treatment.
interdialytic period. (Neuman, 2013) The results of the study found that the average IDWG of respondents was 3.95% with a standard deviation of 2.07%, the lowest value of IDWG of respondents was 0% and the highest value of IDWG of respondents was 11%. IDWG can be classified based on the percentage of weight gain of patients with IDWG said to be mild if weight gain <4%, moderate IDWG if weight gain is 4-6% and for heavy IDWG if weight gain is >6% (Istanti, 2011)

Chou et, al 2017 Based on the above classification it can be concluded that the average increase in IDWG is classified low and from the lowest value found that respondents experienced weight gain with a low classification and for the highest value can be classified respondents are in the weight category. Based on observations made by researchers, it was found that respondents experienced a weight gain of 0-6 kg.

Fluid restriction is often difficult for patients, especially if they consume drugs that make the mucous membrane dry like a diuretic, which can cause thirst which makes the patient drink too much fluid. This is because in normal conditions humans cannot last longer without fluid intake compared to food.

Conclusion
The results of weight gain measurements between the two dialysis times (Interdialytic Weigh Gain) with an average percentage of 3.95% with a standard deviation of 2.075, the lowest value is 0% and the highest value is 11%.

REFERENCE


Flythe, J. E., Assimon, M. M., & Overman, R. A. (2017). Target weight achievement and Future Psychology Interaction of human behavior, culture, and technology to create Society 5.0


