

Effect of Educational Intervention Program on Nurses' Knowledge and Practice about Immunosuppression Drugs of Pediatric Age Groups with Actual Post Liver Transplantation

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Abstract: Liver transplantation to be successful, patients must adhere to a strict regimen of immunosuppressive drugs every day for the rest of their lives and nurses play a crucial role in the establishment of a successful transplantation so nurse must have good knowledge and practice about immunosuppression drugs. Aim of the study was to evaluate the Effect of educational intervention program on nurses' knowledge and practice about immunosuppression drugs of pediatric age groups with actual post liver transplant. Materials and method: A quasi experimental study was conducted at the transplant units at liver institute of al Menoufiya University Hospital, Shebin El-Kom. The subject of the study consists of 60 nurses and evaluated two times before, immediately post EEP. Two tools were used. Tool one: Nurses' knowledge related to immunosuppression drugs. Tool two was nurses' practice related to immunosuppression drugs observational check list. Results: The result of the study provide that nurses knowledge and practice immunosuppression drugs before EEP was inadequate which increase immediately post. Conclusion and recommendation: Continuous in-service educational program for nurses regarding nursing management of children post liver transplantation taking immunosuppression drugs.

Keywords: Immunosuppression Drugs -Pediatric Age Groups - Actual Post Liver Transplant.

1. INTRODUCTION

Immunosuppressive agents are drugs that suppress the immune system and reduce the risk of rejection of foreign bodies such as transplant organs. Different classes of immunosuppressive agents have different mechanism of action. Now immunosuppressive agents are used as cancer chemotherapy, in autoimmune diseases such as rheumatoid arthritis and to treat severe allergy. As immunosuppressive agents lower the immunity there is increased risk of infection ⁽¹⁾.

Immunosuppressant drugs are a class of drugs that suppress, or reduce, the strength of the body's immune system. Some of these drugs are used to make the body less likely to reject a transplanted organ ⁽²⁾, such as a liver, heart, or kidney. These drugs are called anti-rejection drugs. Other immunosuppressant drugs are often used to treat autoimmune disorders such as lupus, psoriasis, and rheumatoid arthritis. Almost everyone who receives an organ transplant must take immunosuppressant drugs. This is because immune system sees a transplanted organ as a foreign mass and attacks the organ as it would attack any foreign cell. This can cause severe damage and lead to needing the organ removed. Immunosuppressant drugs weaken your immune system to reduce your body's reaction to the foreign organ. The drugs allow the transplanted organ to remain healthy and free from damage.

There are several different types of immunosuppressant drugs it well prescribed depends on organ transplant, an autoimmune disorder, or another condition and many people who receive immunosuppressant drugs are prescribed medications from more than one of these categories.

Immunosuppressant drugs come as tablets, capsules, liquids, and injections according doctor will decide the best drug forms and treatment regimen for patient. The goal of immunosuppressant therapy is to find the treatment plan that will suppress your immune system while having the fewest, least harmful side effects ⁽³⁾.

During treatment with immunosuppressant drugs, patient'll have regular blood tests. These tests help doctor monitor how effective the drugs are and whether dosage changes are needed and whether the drugs cause side effects for child received an organ transplant may eventually reduce dosage. This is because the risk of organ rejection lessens over time, so the need for these medications may decrease. However, most child who have had a transplant will need to take at least one immunosuppressant drug throughout their lifetime ⁽⁴⁾.

The number of child taking immunosuppressive drugs for the management of autoimmune inflammatory conditions is increasing. The general practitioner needs to be active in preventing, monitoring and managing the adverse effects of these drugs even long after the treatment has ceased. Monitoring is required because immunosuppressive drugs increase the risks of infection, malignancy, cardiovascular disease and bone marrow suppression. Some drugs have additional risks which require specific monitoring. Vigilance is needed as adverse effects may have atypical clinical presentations ⁽⁴⁾.

Immunosuppressant drugs are available only with a physician's prescription. They come in tablet, capsule, liquid, and injectable forms. The recommended dosage depends on the type and form of immunosuppressant drug and the purpose for which it is being used. Doses may be different for different patients. The prescribing physician or the pharmacist who filled the prescription will advise the patient on the correct dosage ⁽⁵⁾.

Nurse should teach Patients who are taking immunosuppressant drugs that patient should take them exactly as directed, never take smaller, larger, or more frequent doses of these medications. In addition, immunosuppressant drugs should never be taken for a longer period of time than directed. The physician will decide exactly how much of the medicine each patient needs. Blood tests are usually necessary to monitor the action of these drugs ⁽⁵⁾.

Patients should always consult the prescribing physician before they stop taking an immunosuppressant drug. Patients who are taking immunosuppressant drugs should see their doctor on a regular basis. Periodic checkups will allow the physician to make sure the drug is working as it should and to monitor the patient for unwanted side effects. These drugs are very powerful and can cause such serious side effects as high blood pressure, kidney problems and liver disorders. Some side effects may not show up until years after the medicine was used. Anyone who has been advised to take immunosuppressant drugs should thoroughly discuss the risks and benefits of these medications with the prescribing physician ⁽⁵⁾.

Immunosuppressant drugs lower a person's resistance to infection and can make infections harder to treat. The drugs can also increase the chance of uncontrolled bleeding. Anyone who has a serious infection or injury while taking immunosuppressant drugs should get prompt medical attention and should make sure that the treating physician knows that he or she is taking an immunosuppressant medication ^(6,7).

The prescribing physician should be immediately informed if such signs of infection as fever or chills, cough or hoarseness, pain in the lower back or side, painful or difficult urination, bruising or bleeding; blood in the urine, bloody or black, tarry stools occur. Other ways of preventing infection and injury include washing the hands frequently, avoiding sports in which injuries may occur, and being careful when using knives, razors, fingernail clippers, or other sharp objects. Avoiding contact with people who have infections is also important ⁽⁹⁾.

In addition, people who are taking or have been taking immunosuppressant drugs should not have such immunizations as smallpox vaccinations without consulting their physician. Because their resistance to infection has been lowered, people taking these drugs might get the disease that the vaccine is designed to prevent. People taking immunosuppressant drugs should avoid contact with anyone who has had a recent dose of oral polio vaccine, as there is a chance that the virus used to make the vaccine could be passed on to them ⁽⁹⁾.

International Journal of Novel Research in Healthcare and Nursing

Vol. 4, Issue 2, pp: (250-263), Month: May - August 2017, Available at: www.noveltyjournals.com

Immunosuppressant drugs may cause the gums to become tender and swollen or to bleed. If this happens, a physician or dentist should be notified. Regular brushing, flossing, cleaning, and gum massage may help prevent this problem.

A dentist can provide advice on how to clean the teeth and mouth without causing injury ⁽⁹⁾.

Aim of the study was to:

Determine the effect of educational intervention program on nurses' knowledge and practice about immunosuppression drugs of children with actual post liver transplantation.

Research hypothesis:

Educational intervention program for nurses 'expected to be improving their knowledge and practice about immunosuppression drugs of children with actual post liver transplantation.

2. SUBJECTS AND METHOD

2.1 Research design:

A quasi-experimental research design was used

2.2 Setting:

This study was carried out at post liver transplant Intensive Care Unit of liver institute Monefia University.

2.3 Subject: Convenience sampling of sixty nurses of Post care in the above previously mention setting

Inclusion criteria of the children:

- Both sexes
- Free from congenital anomalies
- Post liver transplantation

3. TOOLS OF DATA COLLECTION

3.1 Tools: Two tools were used in this study:

3.2 Tool I: Nurses' knowledge and biosociodemographic data Structure interview schedule regarding immunosuppression drugs of children with actual post liver transplantation

It was developed by the researchers after reviewing the related literature to assess nurses' knowledge related to Immunosuppression drugs of pediatric age actual post liver transplant before and after the implementation of education intervention. It comprise two parts;

3.1.1 Part I: Sociodemographic characteristic of studied nurses such as age, educational level, residence, years of experience at intensive care unit, marital status and attendance related training course.

3.1.2 Part II: Nurses' knowledge related to Immunosuppression drugs: It was developed by the researcher to assess nurses' knowledge. The questions were in a form of multiple choice and open-ended questions related to definition of immunosuppression drugs, activity which increase action of immunosuppression drugs post liver transplantation, complication, contraindication, care of pediatric age group administer immunosuppression drugs, knowledge about immunosuppression drugs used post pediatric liver transplant and educational intervention to avoid infection acquired when taking immunosuppression drugs.

Nurses knowledge was be scored as following:

- Correct and complete answer will be scored (2)
- Correct and incomplete answer will be scored (1)
- Wrong answer or don't know and will be scored (0)

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Vol. 4, Issue 2, pp: (250-263), Month: May - August 2017, Available at: www.noveltyjournals.com

The total score of nurses' knowledge will be calculated and classified into three levels as following:

- 60% will be considered poor knowledge.
- 60- 75% will be considered fair knowledge.
- 75-100 % will be considered good knowledge.

5.2.1 Tool II: Nurses practice observational checklist related to nurses' education intervention about Immunosuppression drug to pediatric age group actual post liver transplantation checklist:

It was adopted by researcher which includes

9 steps for program, nurses how she give program and teach child care responsible how to take, in empty stomach, one hour before eating and two hour after eating, don't exposure to sun direct, don't take antacid two hour before and after program, avoid grapefruit, side effect of use program, sign and symptoms you should call your doctors, what you do if you fell drowsy after take program and what you do if you fell nausea and vomiting

10 for cellecept ,nurses how she give Cellecept and teach child care responsible how to take Cellecept ,in empty stomach , tablet complete without broke it, in stage of you have stomach ulcer you must tell your doctors, avoid antacid drugs and iron two hours before and after take Cellecept, avoid exposure this medication to light, take care about bleeding occurs so use soft brush , electrical shaver and avoid injury, avoid sun exposure, care about your teeth, side effect of Cellecept, and sign and symptoms you should call your doctors.

- Ten steps for Myfortic nurses do and teach child relative ,take Myfortic exactly as prescribed ,do not stop taking or change dose, take on an empty stomach, either 1 hour before or 2 hours after a meal, swallow whole ,do not crush, chew, or cut , If you forget to take, take it as soon as you remember and then take your next dose ,do not take two doses at the same time, call your doctor or pharmacist if you are not sure what to do, avoid exposure to sunlight, store tablets at room temperature (15° to 30°C), does not need to be refrigerated , keep the container tightly closed, store Myfortic in a dry place.

7 steps related to cortisone Procedure to assess nurses practice given to child when he give and teach child response about Cortisone, medication take morning in the same time daily, take with foods, take calcium and D vitamins, avoid antacid drugs and iron two hours before and after take, side effect of Cortisone, sign and symptoms you should call your doctors, must be measure blood sugar and blood pressure daily and follow doctor sport description

Scoring system for nurses' practice will be as follows:

- Done correctly and complete will score (1)
- Done incorrect or not done well will score(0)

The total score of nurses' practice will calculated and classified as follow:

- 60 to less than 75 will be considered unsatisfactory.
- 75-100 % will be considered satisfactory

4. METHOD

- An official Permission was carried out the study from the responsible authorities.
- Ethical and legal considerations:-
- Nature of the study was not causing any harm or pain to the entire sample.
- Confidentiality and privacy was taken into consideration regarding the data collection.
- Nurses' consent was taken to participate in the study and including the right to withdraw at any time.
- The tools were presented to a jury of five experts in the area of specialty to check content validity and clarity of questionnaire.

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- The suitable statistical test was used for testing questionnaire reliability.
- A pilot study was carried out on (10%) of nurses to test the tool for its clarity, applicability, feasibility and the necessary modification was done Pilot study will be excluded from the study
- Study tools was developed & modified based on review of related literature.
- Questionnaire sheet was filled in the clinical area by the studied nurses in presence of the researcher (Tool I).
- Observation checklist was filled out by the researcher who will be available 2 days per week alternatively in different study settings to assess the actual nurses' performance before, immediately from application of intervention (Tool II).
- The study was conducted on three phases:

The steps of intervention guidelines implementation were including:

Setting objectives of the intervention guidelines.

- Preparation of the content which covers the reasons behind the application of the session.
- The educational intervention was conducted in 6th sessions, two / week. The time of each session was about 45-60 minutes.
- Different methods and media of teaching will be used including lectures, group discussion, demonstration and hand out
- The nurses was divided into six subgroups every group consist of 10 nurses

Teaching sessions for nurses was as the following:

The first session: Definition, of immunosuppression drugs, activity which increase action of immunosuppression drugs post liver transplantation

The second session: Infection acquired when taking immunosuppression drugs, complication, and contraindication

The third session: Types of immunosuppression drugs used post liver transplantation

The fourth session: Care of pediatric age group administer immunosuppression drugs and how protect him self from infection exposure

The fifth session: teaching practice about immunosuppression drugs how to taking procedure and nurse's instruction follow up when child take it

The six session: teaching practice about immunosuppression drugs how to taking procedure

"9, Evaluation phase"

Evaluation was done pre and immediately post

Part (a):-Knowledge of the nurses regarding care of neonates at NICU was evaluated and classified as:

Every item was evaluated as follow:

- Correct and complete answer was scored (2)
- Incorrect and incomplete answer had been scored (0)

Total score of knowledge items was calculated in percentage.

- 60% will be considered poor knowledge.
- 60- 75% will be considered fair knowledge.
- 75-100 % will be considered good knowledge.

Part (b):-Practice of the nurses: Every item evaluated as follow:

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Vol. 4, Issue 2, pp: (250-263), Month: May - August 2017, Available at: www.noveltyjournals.com

- Competent (Correct and complete done) had been scored (1)
- Incompetent (incomplete and not done) had been scored (0)

The scoring system of the practice including zero point for either incorrectly or not done, because this result will affect the survival of the actual pediatric post liver transplant

The total score of every item had been calculated in percentage and classified as follow:

- 60 to less than 75 will be considered unsatisfactory.
- 75-100 % will be considered satisfactory

Ethical consideration:

Informed written consent was obtained from each study subject and the interview was done in a total privacy to assure the confidentiality of the data collect and each study subject was informed that they have the right to withdraw at any time from the study

5. STATISTICAL ANALYSIS

Data were collected, tabulated, statistically analyzed using an IBM personal computer with Statistical Package of Social Science (SPSS) version 20 and Epi Info 2000 programs, where the following statistics were applied.

Descriptive statistics: in which quantitative data were presented in the form of mean, standard deviation (SD), range, and qualitative data were presented in the form numbers and percentages (%).

Analytical statistics:

Chi- squared test (χ^2) was used to study association between two qualitative variables For comparing the same group on different times Paired T test was used for parameter quantitative variables and Wilcoxon test was used for non parametric data while McNemar's test is a statistical test used on paired qualitative nominal data. It is applied to 2×2 contingency tables Spearman correlation coefficient test (r-test) is a test of significance used to study the correlation between non parametric quantitative variables .Correlation coefficient test (r-test) results may be positive (+) correlation or negative (-) correlation. It is used to quantify the strength of the linear relationship between two variables.

P-value of (>0.05) was considered not statistically significant.

P-value of (≤ 0.05) was considered statistically significant.

P-value of (≤ 0.001) was considered statistically highly significant.

6. RESULT

Table (1) : percentage distribution of nurses knowledge score before effective training program most of them (95%) are poor score in total knowledge while little of them (3,3%) are good score and only (1,7%) of nurse are fair score. The highest incorrect answers related to (80%) definition of immunosuppression, (76,7%) contraindication, (71.7%) solumedrol in transplant, (70%) prednisone, (75%) celecept, (75%) prograf, (70%) semolecta and (80%) cyclosporine and more than half correct answer (55%) factors enhance immunity and half (50%) side effect of drugs respectively.

The subject comprised of 60 nurses working at menoufiya liver institute concerning educational degree (78.3%) have diploma nurse ,half of them (50%) aged from (20:40) and (48.3%) had less 5 years of experience while none of them were received training related to immunosuppression drugs before.

Table (2): indicates sharp improvement of nurse knowledge immediately post training .The table show that most of them (98.3%) are good score immediately post training, only (1,7%) are fair score and none of them were poor score immediately post training. Most of nurses (98.3), (98.3), (98.3), (95%), (98.3), (95%), (96.7%) definition of immunosuppression , autoimmune ,exposure to sun, solumedrol in transplant, celecept ,prograf and cyclosporine are good knowledge score respectively .

Table (3): Demonstrate that knowledge score of studied groups post training program highly increase from (20%), (23.3%), (36.7%), (28.3%), (30%) (25%), (25%), (30%), (15%) to (98.3), (90%), (98.3%), (95%), (93.3), (98.3), (95), (93.3), (96.7) in definition, contraindication, sun exposure, solumedroal, predezoline, celeccept, prograf, semolecta, cyclosporine respectively. It is was notice that there was a high significant correlation between total knowledge score pre and immediately post effective training program where P value equal to 0.00**(<0.001)each. Also this table showed that the mean knowledge score were highly increase immediately after application training program from (41.8±12.9) to (88.9±5.3) .

Table (4): Correlation between total nurses knowledge score and their general characteristics .This table illustrate that there was a significant positive correlation was found between knowledge score level and their age and year of experiences where P value equal to 0.00** each while there was no a significant correlation between nurses knowledge and educational degree and Sociology stats where P value equal to (0.54) and (0.43) respectively.

Table (5): Majority of nurses had poor knowledge score level mean of age and year of experience were (27.6±8.7) and(1.8±0.99) respectively , same table found that a high significant correlation between age and year of experience where P value equal to (0.035) and (0.038) respectively

Table (6): These tables show that all nurses (100%) had poor performance score in pre effective training program in prograf and cellecept and none of them were good or fair score while more of them (91.7%) and (90%) were poor performance score in Myfortic and Cortisone and only 8.0% and 10% were fair in in Myfortic and Cortisone respectively

Table (7): These tables show that most of nurses (95%),(90%),(91.6%) and (96.6%)had good performance score in post effective training program in prograf and cellecept , Myfortic and Cortisone while only (8.3%) , (6.7%) and (1.7) were fair in in celeccept , Myfortic and Cortisone respectively

Table (8): This table show that a high significant correlation between pre and immediately post nurses performance score post effective training program where P value equal to 0.00 each while all nurses (100%) were unsatisfied in pre compared to (96.7%) were satisfied in post effective training program respectively. Also mean of performance score are more than double increase (31.6±12.04) and (87.8±5.9)respectively .Also it was found high significant correlation between mean of pre and post practice while P equal to(0.00**) and(<0.001) respectively.

Table (9): This table illustrate that there was no statistical significant correlation found between total practice score and nurses general characteristics age, year of experiences, educational level and Sociology status where P value equal to (0.19),(0.12),(0.59)and(0.99) respectively.

Table (1): Percentage distribution of nurses knowledge score pre effective training program

Item	No	%
Definition of immune suppressive drugs		
Correct	28	46.7
Incorrect	32	53.3
Definition of autoimmune disease		
Correct	12	20
Incorrect	48	80
Factors enhancing immunity		
Correct	33	55
Incorrect	27	45
Side effect to immune suppressive drugs		
Correct	30	50
Incorrect	30	50
Contraindication to immune suppressive drugs		
Correct	14	23.3
Incorrect	46	76.7
Patient exposure to sun		
Correct	22	36.7

Incorrect	38	63.3
Stopping immune drugs		
Correct	25	41.7
Incorrect	35	58.3
Solumerdol in liver transplant in children		
Correct	17	28.3
Incorrect	43	71.7
Bredenzelone liver transplant in children		
Correct	18	30
Incorrect	42	70
Celecept in liver transplant in children		
Correct	15	25
Incorrect	45	75
Prograf in liver transplant in children		
Correct	15	25
Incorrect	45	75
Semiolect in liver transplant in children		
Correct	18	30
Incorrect	42	70
Cyclosporine in liver transplant in children		
Correct	9	15
Incorrect	51	80
Total Knowledge score pre		
	No	%
- Poor	57	95
- Fair	1	1.7
- Good	2	3.3

Table 2: Percentage distribution of nurses knowledge score post effective educational program

Item	No	%
Definition of immune suppressive drugs		
Correct	59	98.3
Incorrect	1	1.7
Definition of autoimmune disease		
Correct	59	98.3
Incorrect	1	1.7
Factors enhancing immunity		
Correct	55	91.7
Incorrect	5	8.3
Side effect to immune suppressive drugs		
Correct	55	91.7
Incorrect	5	8.3
Contraindication to immune suppressive drugs		
Correct	54	90
Incorrect	6	10
Patient exposure to sun		
Correct	59	98.3
Incorrect	1	1.7
Stopping immune drugs		
Correct	56	93.3
Incorrect	4	6.7
Solumerdol in liver transplant in children		
Correct	57	95.5
Incorrect	3	
Bredenzelone liver transplant in children		

Correct	56	93.3
Incorrect	4	6.7
Celecept in liver transplant in children		
Correct	59	98.3
Incorrect	1	1.7
Prograf in liver transplant in children		
Correct	57	95
Incorrect	3	5
Semolect in liver transplant in children		
Correct	56	93.3
Incorrect	4	6.7
Cyclosporine in liver transplant in children		
Correct	58	96.7
Incorrect	2	3.3
Total knowledge score immediately post		
- Poor	0	0
- Fair	1	1.7
- Good	59	98.3

Table (3): Percentage distribution of nurses knowledge score pre and post effective training program

Item	Pre lecture		Post lecture		Test of signific.	P value
	No	%	No	%		
Definition of immune suppressive drugs						
Correct	28	46.7	59	98.3	McNemar	P=0.00**
Incorrect	32	53.3	1	1.7		
Definition of autoimmune disease						
Correct	12	20	59	98.3	McNemar	P=0.00**
Incorrect	48	80	1	1.7		
Factors enhancing immunity						
Correct	33	55	55	91.7	McNemar	P=0.00**
Incorrect	27	45	5	8.3		
Side effect to immune suppressive drugs						
Correct	30	50	55	91.7	McNemar	P=0.00**
Incorrect	30	50	5	8.3		
Contraindication to immune suppressive drugs						
Correct	14	23.3	54	90	McNemar	P=0.00**
Incorrect	46	76.7	6	10		
Sun exposure to immune suppressive drugs						
Correct	22	36.7	59	98.3	McNemar	P=0.00**
Incorrect	38	63.3	1	1.7		
stopping immune suppressive drugs						
Correct	25	41.7	56	93.3	McNemar	P=0.00**
Incorrect	35	58.3	4	6.7		
Solumerdol in liver transplant in children						
Correct	17	28.3	57	95	McNemar	P=0.00**
Incorrect	43	71.7	3	5		
Predezelone in liver transplant in children						
Correct	18	30	56	93.3	McNemar	P=0.00**
Incorrect	42	70	4	6.7		
Celecept in liver transplant in children						
Correct	15	25	59	98.3	McNemar	P=0.00**
Incorrect	45	75	1	1.7		
Profage in liver transplant in children						
Correct	15	25	57	95	McNemar	P=0.00**

Incorrect	45	75	3	5		
Semolect in liver transplant in children						
Correct	18	30	56	93.3	McNemar	P=0.00**
Incorrect	42	70	4	6.7		
Cyclosporine in liver transplant in children						
Correct	9	15	58	96.7	McNemar	P=0.00**
Incorrect	51	85	2	3.3		
Item	Pre lecture(Total knowledge)		Post lecture(Total knowledge		Test of signific.	P value
	No	%	No	%		
Definition of immune suppressive drugs						
Poor	57	95	0	0	X ² =110.3	P=0.00**
Fair	1	1.7	1	1.7		
Good	2	3.3	59	98.3		
		Knowledge pre % (mean± SD)		Knowledge post % (mean± SD)		Test of sig. & p value
Over all participants		41.8±12.9		88.9±5.3		
						Paired t = 27.1 P =0.00**(<0.001)

Table 4: Correlation between nurses' performance scores and their general characteristics

Parameter	Knowledge pre	
	R	P value
Age	0.53	0.00**
Experience	0.47	0.00**
Educational level	0.08	0.54
Socioeconomic status	0.10	0.43

Table (5): Mean nurses' knowledge score level and their general characteristic age and year of experience

	Poor (57)	Good (1)	Fair (2)	Test of sig. & P value
Age : Mean ±SD	27.6±8.7	41.0	41.5±0.71	F=3.6 P= 0.035
Experience in years : Mean ±SD	1.8±0.99	4.0	3.0±1.4	F=3.5 P= 0.038

Table 6: Percentage distribution of nurses performance level pre effective training program

-	Frequency	Percentage
Prograf		
- Poor	60	100%
- Fair	0	0%
- Good	0	0%
Celepet		
- Poor	60	100%
- Fair	0	0%
- Good	0	0%
Myfortic		
- Poor	55	91.7%
- Fair	5	8.3%

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- Good	0	0%
Cortisone		
- Poor	54	90%
- Fair	6	10%
- Good	0	0%

Table (7): Percentage distribution of nurses performance level post effective training program

Item	Frequency	Percentage
Prograf		
- Poor	3	5%
- Fair	0	0%
- Good	57	95%
Celepert		
- Poor	1	1.7%
- Fair	5	8.3%
- Good	54	90%
Myfortic		
- Poor	1	1.7%
- Fair	4	6.7%
- Good	55	91.6%
Cortisone		
- Poor	1	1.7%
- Fair	1	1.7%
- Good	58	96.6%

Table (8): Correlation between total nurses performance score pre and post effective training program

Item	Pre lecture (Total Practice)		Post lecture (Total Practice)		Test of signific.	P value
	No	%	No	%		
Practice						
Unsatisfactory (<75%)	60	100	2	3.3	X ² =108.4	P=0.00**
Satisfactory (75-100%)	0	0	58	96.7		
Over all participants	Practice pre % (mean± SD)		practice post %		Test of sig. & p value	
	31.6±12.04		87.8±5.9		Wilcoxon =6.7 P =0.00**(<0.001)	

Table (9): Correlation between nurses' performance scores and their general characteristics

Parameter	practice pre	
	r	P value
Age	0.17	0.19
Experience	0.20	0.12
Educational level	0.07	0.59
Socioeconomic status	0.001	0.99

7. DISCUSSION

The primary objectives of nurses caring for the immunosuppressed child post liver transplant are to create a safe, peaceful environment and to promote the quality of the child life. One competency is a thorough understanding of the immunosuppressed drugs for child actual post liver transplant. Finally the nurse must have the ability to implement

appropriate nursing measures as the principles of asepsis in all child care activities, recognize risk factors of infection, and understand the importance of such details as proper nutrition, oral hygiene, skin care, psychological support and care affects the well-being of the immunosuppressed drugs post liver transplant child appropriately.

The current study revealed that a great lack of knowledge regarding immunosuppressed drugs post liver transplant child before the application of effective training program; all nurses had a poor knowledge score level. This reflects the lack of scientific preparation in these specialized fields. This might be related to the fact that liver transplantation and immunosuppressed drugs post liver transplant are a new surgical field specialty and the studied nurses were not properly prepared prior to their working and dealing with such patients.

The present study proved that the majority of nurses had poor total percentage score of knowledge related to immunosuppressed drugs post liver transplant pre effective training program application, also Hussain et al. (2009) who stated that the majority of nurses have poor knowledge before application of training program

The current study revealed that majority of the nurses had a poor knowledge score related to immunosuppressed drugs post liver transplant definition, contraindication, solumedrol in transplant, predizolne, celecept, prograf, semolecta and, cyclosporine use in liver transplant. Mostly all of nurses were willing to attend training programs, Tedesco (2011) and Swain (2011) who in agreement with the present result and mentioned that the nurses need an improved knowledge on immunology and pharmacology for transplantation, and infectious diseases.

The current study found that majority of the nurses had a good knowledge score about immunosuppressed drugs post liver transplantation after the application of effective training program. Mathis, et al. (2013) who supported the present result and found a high significant improvement in staff knowledge and attitudes regarding urinary incontinence in a nursing home while using evidence-based educational programs. Also Nada, (2014) who supported this present study and found that a high significant improvement in nurses knowledge in evidence based pediatric liver transplant after application of nurses training.

Templeton, Coates, (2004), stated that using evidence-based education packages have a significant effect on knowledge, quality of life for men with prostate cancer on hormonal manipulation therapy and satisfaction with care client group.

This finding study found that all nurses had poor performance score pre effective educational program supported by Salem (2006) who showed that, half of the studied nurses gave correct responses when assessing their level of knowledge, while none of them attained the competent level in their performance.

The current study revealed a great improvement in the performance score levels obtained by nurses after the application of effective training program practice in relation to in prograf, cellecept Myfortic and Cortisone. Meissner (2012) who agreement with the present results and finds a significant improvement after the program application also El-Azazy (2012) who is agreement with the present study and mentioned that the mean performance was low in pre-evidence guidance and increased immediately post-evidence guidance.

Franco et al (1996) Experience report Present the development of patients' education who participate in programs of organs transplantation and discuss their educational needs after application educational program on nurses to give teaching to patient about transplant. Also Mendes (2008) who state that Scientific knowledge on immunosuppressive drugs is essential for the nurse to implement efficient interventions in clinical practice Liver transplantation evidence.

The present study found that there was no significant correlation between educational degrees; job specification and performance level because it was new field and all of them were not provided with training practice before. This result agreed with Abd ELAziz (2003) agreed with the present result and mentioned that there was no significant correlation between the nurses' practice and their qualifications and job specifications.

The majority of the studied nurses demonstrated incompetent level of performance in caring of child post liver transplant taking immunosuppression drugs before effective educational program. The findings are in harmony with a study carried out by El-Sayed (1996) who reported that none of the studied nurses had good performance in general measurements for the neonates before application of educational program to nurses at premature unit. Furthermore, El-Mommani (2003) who stated that the lowest scores were assigned to taking general measurements, and Mahmoud (2004) reported that approximately two-thirds of nurses were unsatisfactory in his study. In addition Mohamed (2004) who found that the majority of nurses not make measurement before application of educational program.

8. CONCLUSION AND RECOMMENDATION

Most of the nurses have poor knowledge and practice score related to immunosuppression drugs of child actual post liver transplant so we recommended that continuous educational training programs in hospitals especially new fields and trends.

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