HEALTH CARE PROVIDER KNOWLEDGE AND ATTITUDE REGARD USES OF STEM CELLS AND CORD BANKS

Thesis

Submitted for partial fulfillment of the master degree
In Nursing Sciences

By

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✍ *Amaal Ramadan Abdo*

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List of Abbreviations

Abb.		Meaning
AABB	:	American Association of Blood Banks
CGMP	:	Current Good Manufacturing Practices
CGTP	:	Current Good Tissue Practices
FACT	:	Foundation for the Accreditation of Cellular Therapy
FDA	:	Food and Drug Administration
HCT/Ps	:	Human cells, tissues, and cellular/tissue-based products
hESCs	:	Human embryonic stem cells
HSCS	:	Haematopoietic stem cells
iPSCs	:	Induced pluripotent stem cells
UCB	:	Umbilical cored blood

ABSTRACT

Background*:** Stem cells are mother cells that have the potential to become any type of cell in the body. One of the main characteristics of stem cells is their ability to self renew or multiply while maintaining the potential to develop into other types of cells. Stem cells can become cells of the blood, heart, bones, skin, muscles and brain. There are different sources of stem cells but all types of stem cells have the same capacity to develop into multiple types of cells. Bredeson C, Leger C,2006. ***Subjects and methods: A descriptive study design was used aiming to assess knowledge of health care provides regarding uses of stem cells the study was conducted at in Ain Shames University Maternity Hospital. All available health care providers work in the mentioned setting they were (20 doctors and 75 nurses). Through using a descriptive technique. Tools for data collection will be consisted of Structured interviewing Arabic Questionnaire Sheet. ***Results:*** It will designed by the researchers after reviewing the related literature. The tool will included 19 multiple choices questions, as well as an open and close-ended questions.. Concerning health care providers age 48% of them their age ranged from 25-30 year. As regards their academic qualifications 54% diploma in nursing. While 45% of the health's care providers had 10 years or more of experiences in the field of obstetrics and gynecology. Illustrates the health care providers level of knowledge about the stem cells, only few 20% of health care providers had good knowledge,3% average, and slightly more than three quarters of them had weak level. shows that, the majority of health care providers (nurses) had no information 67% and 100% had positive information (doctors). The current study concluded that to the result of the present study some important points as the following. The more age of health care providers had good knowledge between 25-30 year. ***Recommendations:*** The study results have indicated the following recommendations: 1) Raising awareness of health care providers to the importance of stem cells and cord blood banks; 2) Health care providers should be informed about stem cells and current indications for its, collection, storage, and uses based on scientific evidence; 3) Activates stem cells transplantation programs in the hospitals because it very effective and important to cure from most of diseases. Future research to assessment health care providers in stem cells transplantation, enhancing the quality education for health care providers.

Key Words: Stem cells; self renew

INTRODUCTION

Stem cells One of the human body's master cells, with the ability on of the human body's more than 200 cell types stem cells are unspecialized (undifferentiated) cells that are characteristically of the some family type (lineage). They retain the ability to divide throughout life and give rise to cells that can become highly specialized and take the place of cells that die or are last stone contribute the body's ability to renew and repair its tissues, un like mature cells which are permanently committed to their fate, stem cells can both renew themselves and create new cells of whatever tissue they boding to and other tissues. Bone marrow stem cells, for example are the mast primitive cells in the marrow from them all the various types of blood cells are descended. Bone marrow stem all transfusions (or transplants) were originally given to replace various types of blood cells Mulrpotent stem cells, found in adults or in babies umbilical cords, lave a more limited capacity their development is limited to cells that mature up the organ system ***(Ikuta. 2008)***.

Umbilical cored blood (UCB) is a source of the rare but precious primitive hematopoietric stem cells and progenitor cells can reconstitute the hematopietic system in patients with malignant and non-malignant disorders treated with myeloablative therapy. UCB cells passes an enhanced capacity

for progenitor cell proliferation and self reneural in vitro USB is usually discarded, and it exists in almost limitless supply. This blood remaining in delived placenta is safely and easily collected and stored ***(Croatica. 2009)***.

The predominant collectedion procedure currently practiced involves a relatively simple venipuncture, followed by gravity drainage into a standard sterile anti-coagulant filled blood clotting?

Umbilical cord blood (UCB) has been shown to be a suitable source of haematopoietic stem cells (HSCS) for haematopoietic recon as situation. An increase in the number of UCB transplants indicates an expansion of utility in abroad spectrum of disease conditions a long with the advantages, UCB also has limitation and hence several investigation are worting to further optimize UCB for this use ***(Mclenna D, 2011)***.

Although the use of embryonic stem cells to treat disease has caused much contraversx one type of stem cell treatment has slowly and steadily shown promise but has not engendered negative ethical media attention the use of umbilical stem, umbilical cord blood (UCB) contains stem cells that have already successfully treated a variety of disease including leukemia's lymphomas hemoglobin pathies immunodeficiencies, and disorders of metabolism, ongoing research continuous to explore

addition at disease for patemial treatment cord blood can be stored in private banks or public banks ***(Journal., 2011)***.

Umbilical cord stem cells and stem cells transplantation cord blood has the potential to save live, stem cell found in cord blood are versatile; they can mature into many diverse cells that can form different tissue for organs through the body ***(Ikuta. 2008)***.

Health care providers needs to be aware of the positives and negatives for both private and public cord blood banking in order to better educate the patient. Private cord blood banking cord blood is stored privately, for possible future use by child or family member initial storage fee of 1.800$ and to 2100 $. Some health cone provider's also change a fee for cord blood contentions; patients should discuss this with there health care providers. Public cord blood banking stone cord blood for the general public/unrelated individuals in need of stem cells, Donation to a public bank is done on a volunteer basis ***(S.auter, 2008)***.

Parents and women's health care providers can go to parents guide to cord blood card blood can be collected after delivery of the placenta, or may be collected prior to the their stage of labor by the birth attendant while waiting for placental separation. If collection is completed in utero, it is collected by physician or mid wife if cord blood is collected after delivery of

the placenta, it may collected by the physician, mid wife, or cord blood bank specials ***(Barker, 2008)***.

Nurses are a trusted source of information for most patients. As such, the nurse and or nurses practitioner, needs to be informed about the practices and indications for cord blood banking and be able to direct the patient as to where she can obtain additional informational so she can make an informed choice, nurses as well as primary care provides should be able to explore appropriate options for the patients including public cord blood banking. An important aspect of this discussion is whether or not the patient has a known affected family member who may benefit from the cord blood, as this can influence the decision to collect cord blood as well as how to store it.

There are several programs in place that allow cord blood storage at no cast if a family member is affected with a disease that can be treated with a cord blood transplant the cord blood registry stored for 5 years ***(Fox et al., 2008)***.

Once health care providers are armed with expert knowledge of subject, they will be equipped to teach their patients about cord blood banking, including all the advantage, disadvantages, storage options, and statistics regarding use, there will be patients who prefer private blood banking and those who prefer public, and those who prefer no cord blood banking at all, and nurse should be accept the patients choice.

Regardless of whether a health care provider prefers private or public or public storage, the decision is ultimately in the hands of the patients and they should be guided with facts and unbiased answers ***(Journal, 2011)***.

Significance of study:

- Stem cells and cord blood banks are one of the new eras today. Most of health care providers not informed about the stem cells and how found it, in about current' indications, for us collection, storage, uses and cord blood banks Health care providers of maternity hospitals are not receiving training in standardized cord blood unit volume and how to reduce the rejection rate owing labeling problems, bacterial contaminated ***(Mclenna D, 2011)***.

- In Egypt, there is no constant previous statistical data regarding stem cells and cord blood banks,

- There for, the researcher suggested the present study because it is mandatory to assess health care provider knowledge and attitude regarding stem cells and cord blood banks as one of new era need to be educated to the clients to reduce stress, anxiety and fear.

AIM OF THE STUDY

- To assess knowledge and attitude of health care provides regarding uses of stem cells and cord blood banks.

Study questions

- What are the level of knowledge of health care providers regarding uses of stem cells and cord blood banks?
- What are the attitudes of health care provides regarding uses of stem cells and cord blood bank?

REVIEW OF LITERATURE

- **Chapter I:** Cord blood stem cells and cord blood.
- **Chapter II:** Cord blood banks.
- **Chapter III:** Nursing management regarding uses of stem cells and cord blood banks.