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A Case Study of the Dietitian's Role in Rehabilitation of Stroke Patients through Nutritional

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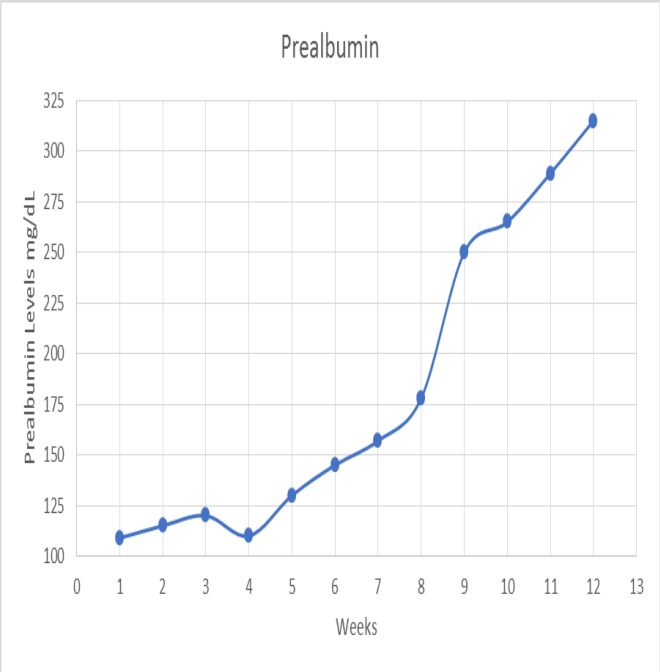
Graphical Abstract



Abstract.

A registered dietitian is an expert in dietetics and nutrition. Dietitians also monitor the tube feeding and lab values. Registered Dietitians are trained professionals in nutrition and work in many settings such as hospitals, public health facilities, sports nutrition, and research ("Registered Dietitian Career Overview", n.d.). The scope of practice focuses on the nutrition, food, and dietetics practice, to protect the community and population, but also determining the education, credentials and training levels needed for a registered dietitian. When there is a patient in a coma, the RD recommends the patient receives a nasogastric tube feeding. Stroke is the fifth leading cause of death in the United States. The cause of stroke is due to hemorrhaging of blood in the brain

caused by aneurysms.

During a case study on a recent stroke patient, a registered dietitian provided medical nutrition-therapy based on evidence-based science. Patient X received nutrition, hydration and medication through the nasogastric tube. The RD's interventions were in response to lab values being monitored daily. Residuals in the stomach were used to evaluate the tolerance of the tube feed formula. Protein status was monitored by prealbumin levels. Hydration was measured by specific gravity in the urine output.

As the residuals decreased in the stomach, the protein status increased to normal levels. Due to dehydration, the patient became constipated, as evidence by the lack of bowel movement. When fluid levels were increased in the tube feed and specific gravity returned to normal ranges, indicated the patient was hydrated.

The data shows that when residuals are low, the prealbumin levels will be high, indicating that the patient is absorbing protein. The data also supports that RD are essential in health care outcomes of stroke patients. The number three cause of death is due to medical errors due to the lack of interprofessional

	communications. A dietitian working with a stroke patient knows how to collaborate with other departments, by knowing the skills and expertise the other team members do.

Introduction

Hippocrates, the father of medicine discovered the stroke and medicine, over 2,400 years ago ("Stroke: Hope through Research", 2004). A stroke was called "apoplexy", which was a term said when a patient was suddenly stuck with paralysis ("Stroke: Hope through Research", 2004). Johann Jacob Wepfer was the first to investigate the signs of apoplexy and was the first to investigate the signs of bleeding in the brain ("Stroke: Hope through Research", 2004). Wepfer also said that not only could strokes be caused by bleeding in the brain, but also from blockage of the main arteries of the brain ("Stroke: Hope through Research", 2004).

Greek Medicine was derived from Hippocratic Corpus, from as early as the fourth and fifth century BCE (Totelin, 2015). In the fifth century BCE, the Hippocratic's established discipline in dietetics (Totelin, 2015). During World War I there were 365 total dietitians who remained overseas and at the home front which were part of the army's services ("The History of the Academy of Nutrition and Dietetics", n.d.). Blanche Joseph created the American Dietetic Association as the organization for dietetics in 1917 ("The History of the Academy of Nutrition and Dietetics", n.d.). Dietitians were classified as sub-professionals and were required to complete two-years of training, in 1920 ("The History of the Academy of Nutrition and Dietetics", n.d.). The requirements to be a dietitian in the late twenties were to complete four years of college degree, and six months of training in a hospital ("The History of the Academy of Nutrition and Dietetics", n.d.). In 1966, the Academy of Nutrition and Dietetics became known as the charitable organization that helps nutrition and dietetics ("The History of the Academy of Nutrition and Dietetics", n.d.). The first cook in America to be

concerned with health issues via nutrition was Sarah Tyson Rorer ("The History of the Academy of Nutrition and Dietetics", n.d.). Sarah worked closely with doctors to create special diets for the patients ("America's first Dietitian", 2012). In the nineteenth century, science was being incorporated to dietitians' practice ("America's first Dietitian", 2012). Books were published for housewives as well as educational books for the professors who were practicing in school to educate students about cooking healthy ("America's first Dietitian", 2012). Martha Bradley was a professional cook and housekeeper that created home remedies out of food for patients suffering minor complaints ("America's first Dietitian", 2012). In 1917, Caroline Hunt created the first food groups for children; this was called the five food groups, which included milk, meat, poultry, grains, fats, fruits, and sweets ("America's first Dietitian", 2012).

The Commission on Dietetic Registration (CDR) of the Academy of Nutrition and Dietetics (AND) has set education strategies and standards for Registered Dietitians (RD) ("Registered Dietitian Career Overview", n.d.). Students must complete college credits in dietetics or nutrition that is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) from the Academy of Nutrition and Dietetics ("Registered Dietitian Career Overview", n.d.). There are two educational routes a student can take; Coordinated Program in Dietetics, where students will take college courses while doing an internship or; Didactic Program plus Dietetic Internship, in this modality students only take classroom courses to receive a degree with 1200 hours of simulated service serves as a way to have the Dietetic Internship completed ("Registered Dietitian Career Overview", n.d.). The basic courses for a Registered Dietitian are anatomy and physiology, chemistry, microbiology, biochemistry, computer science, sociology, economics, business, food and nutrition sciences, and food service systems management ("Registered Dietitian Career Overview", n.d.). Dietetic Internships focus on food and nutrition such as medical nutrition therapy, clinical nutrition research, pediatric, community and geriatric nutrition ("Registered Dietitian Career Overview", n.d.). Dietitians and nutritionists need a master's degree in clinical nutrition, dietetics, food and nutrition, public health nutrition, or any related area to practice ("Occupational Outlook Handbook", n.d.).

After completing the master's program, Registered Dietitians are eligible to sit in for the RD, registration examination for Dietitian and Nutritionist exam ("Registration Examination for Dietitians Handbook for Candidates", 2017). The Registration Examination for Dietitians is the final step in earning the Registered Dietitian credential (Commission on Dietetic Registration Examination, n.d.). Before registering for the exam, the candidate is required to review the Commission on Dietetic Registration Handbook to understand how to schedule the exam, know the content of the exam, and the reporting of results ("Registration Examination for Dietitians Handbook for Candidates", 2017). The Commission on Dietetic Registration published a Registration Examination for Dietitians study guide which includes an outline of how the exam is implemented, as well as study tips, and practice exams ("Registration Examination for Dietitians Handbook for Candidates", 2017). In order to sit in the exam, the candidate needs to receive an authorization to test from Pearson VUE ("Registration Examination for Dietitians Handbook for Candidates", 2017). In the United States and some selected international locations, there are over two hundred and fifty test centers year-round to take the Registration Examination for Dietitians ("Registration Examination for Dietitians Handbook for Candidates", 2017). Twenty-five percent of the exam is on the principles of dietetics, forty percent on nutrition care for individuals and groups, twenty-one percent on management of food and nutrition programs and services, and fourteen percent on foodservice systems ("Registration Examination for Dietitians Handbook for Candidates", 2017). The minimum amount of questions are one hundred and twenty-five, maximum is one hundred and forty-five, and the candidate has three hours to take the exam ("Registration Examination for Dietitians Handbook for Candidates", 2017). In order to pass the exam a candidate must receive twenty-five or higher on a scale from one to fifty ("Registration Examination for Dietitians Handbook for Candidates", 2017). By passing the Registration Examination for Dietitians allows the registered dietitian to use the license in forty-five states ("Commission on Dietetic Registration Examination", n.d.). California and Virginia do not require Registered Dietitians to have a license or certification, but only require the completion of course credentials ("Commission on Dietetic Registration Examination", n.d.). There are five states that a registered dietitian or

nutritionist does not need to have credentials or the exam to practice, designated states are Arizona, Colorado, Michigan, Montana, and New Jersey ("Commission on Dietetic Registration Examination", n.d.).

Registered Dietitians are recognized in all fifty states for credentials, but in forty-seven of the states, especially in Puerto Rico and the District of Columbia, are recognized for the license of dietitian or nutritionist ("Licensure and Professional Regulations of Dietitians", n.d.). The Academy is protecting the public from states that do not maintain the dietetics licensure laws standard to the majority ("Licensure and Professional Regulations of Dietitians", n.d.). In order to become a Registered Dietitian, the CDR requires to meet and pass the Registration Examination for Dietitians and then apply for a license or certification for the state ("Registered Dietitian Career Overview", n.d.). The state of Florida Department of Health requires the Registered Dietitian to pay a $355 application fee and completely fill out the application to receive the license ("Registered Dietitian Career Overview", n.d.). Once the license is received in Florida, the credential the registered dietitian will use is Licensed Dietitian/Nutritionist (LD/N) ("Registered Dietitian Career Overview", n.d.). To maintain the license in the state of Florida renewal is required every two years with a continuing education (CE) ("Registered Dietitian Career Overview", n.d.). The continuing education consists of prevention of medical errors for two hours; HIV/AIDS for three hours, which is only for first time renewal licensures; thirty hours of approved continuing education ("Registered Dietitian Career Overview", n.d.). To maintain the CDR registration for Registered Dietitian in Florida the registration must be renewed every five years, and during this time, seventy-five hours need to be completed of Continuing Professional Education Units (CPEUs) ("Registered Dietitian Career Overview", n.d.).

When a registered dietitian receives experience, there are six nutrition certifications that can be received ("Registered Dietitian Certification and Licensure", n.d.). To receive the Board-Certified Specialist in Gerontological Nutrition, Obesity and Weight Management, Oncology Nutrition, Pediatric Nutrition, and Renal Nutrition requires passing an exam ("Registered Dietitian Certification and Licensure", n.d.).

The scope of practice of registered dietitians focuses on the nutrition, food, and dietetics practice, to protect the community, public and the population ("Scope of Practice", n.d.). The corporation enhances the well-being of the clients and patients, with the help of the programs, services, and the quality of the products ("Scope of Practice", n.d.). The company helps with standard performance and practice, the code of ethics, state and federal regulations, policy and procedures as well as the national guidelines ("Scope of Practice", n.d.). The organization helps the role, activity, and the regulations remain updated and consistent for dietitians (Academy of Nutrition and Dietetics: Scope of Practice for registered Dietitian", 2013). The Medical Nutrition Therapy is provided under the scope of practice, and each RD has an individual scope of practice that determines the education, credentials and training (Academy of Nutrition and Dietetics: Scope of Practice for registered Dietitian", 2013).

Stroke is the fifth cause of death in the United States ("Understand Stroke", n.d.). A stroke is caused when blood flow to the brain is cut off and the neurons in the brain do not receive enough oxygen ("Understand Stroke", n.d.). Hemorrhagic stroke is the less common stroke but causes forty percent of stroke deaths ("Understand Stroke", n.d.). Hemorrhagic stroke happens from a weakened blood vessel leak or a brain aneurysm ("Understand Stroke", n.d.). There are two types of hemorrhagic strokes which include intracerebral and subarachnoid ("Understand Stroke", n.d.). The other type of stroke is Ischemic stroke which happens when blood vessels carrying blood to the brain are blocked by a clot ("Understand Stroke", n.d.). The two ways ischemic strokes can happen are by embolic or thrombotic blockage ("Understand Stroke", n.d.). Due to strokes causing neurological cell death, a patient will lose speech, memory, and movement depending on the area of the brain that was deprived of oxygen ("Understand Stroke", n.d.). Lowering the blood pressure of a hypertense patient can help prevent ischemic and hemorrhagic strokes (Ezekowitz, 2003). After three years of antihypertensive drug therapy, patients who are aggressive towards the blood pressure can reduce the probability of having a stroke (Ezekowitz, 2003). Patients who have diabetes are also at high risk of any kind of stroke (Ezekowitz, 2003).

Registered Dietitians assess patients' diet intake with food records, food frequency questionnaires, and 24-hour recalls; which may be declined due to cognitive impairments, visual impairments, and apraxia (Serra, 2018). Registered dietitians measure the body weight, BMI, skinfold, arm circumference, albumin, prealbumin, transferring and lipids throughout the patients stay (Serra, 2018). RDs also monitor and check for any fluctuations in the patient's weight, because ~45 percent of stroke survivors will lose about 6 pounds within sixteen months (Serra, 2018). The tools that RDs use is subject to global assessment (SGA) and the mini nutritional assessment (MNA) (Serra, 2018). RDs take into consideration the patient's preexisting medical conditions, such as malnutrition, comorbidities, and obesity in chronic stroke patients as well as anxiety and depression (Serra, 2018).

In addition, red tableware and special cutlery featuring good grip can help a patient eat, especially those who had a stroke and can only motor one hand or certain hand ("Assisting Patients with eating and drinking to prevent malnutrition", 2017). During the patient's meal is the perfect time to assess how the patient is swallowing, or if the patient coughs, chokes, or takes a long time to eat, or complains about any discomfort. The speech therapist is notified when the patient feels any of these signs or symptoms ("Assisting Patients with eating and drinking to prevent malnutrition", 2017).

There are many health care professionals that are needed to assist in the recovery of a stroke patient. Doctors that work with stroke patients are the neurologists and general physicians, the specialist in rehabilitation help the patients and families make better choices ("The Stoke Team, n.d.). Nurses help the patients with daily activity such as bathing, eating, and helping the patient get dressed ("The Stoke Team, n.d.). Social workers meet with the patients and the families to provide advice on finance, as well as being qualified to counsel the family members affected emotionally ("The Stoke Team, n.d.). Physiotherapists help stroke patients with movement and set goals for the patients to exercise ("The Stoke Team, n.d.). Speech therapists help the patient understand, write, read and speak ("The Stoke Team, n.d.). The speech therapist and registered dietitian focus on the patient's nutrition and assessing the patients swallowing and chewing. The Dietitian also advises on the diet the patient should move forward with ("The Stroke Team, n.d.). Neuropsychologist help with memory and the

brain (“The Stoke Team, n.d.). Occupational therapists (OT) help the patients with daily living and getting independence back by teaching the patient certain skills and activities that are needed at home and every day (“The Stoke Team, n.d.). The occupational therapist also assists the dietitian with teaching the patient to eat, where the dietitian will provide the proper nutrition (“The Stroke Team”, n.d.).

Professionals do not always work well together which can negatively affect the patient (Cramm, 2011). The best way to improve the team is communication, understanding each team members role, coordinating and collaborating with each team member (Cramm, 2011). When a team member makes a mistake the next team member to look over a patient’s chart will not correct the mistake where needed, causing 440,000 patients to die every year from errors made in the hospital. Strokes are the third leading cause of death (“Errors, Injuries, Accidents, Infections”, n.d.).

Materials and Methods

To investigate the effectiveness of the therapeutic diet followed by stroke patient X, the Registered Dietitian (RD) began recording information the day the patient arrived at the hospital from a stroke. Patient X had a physical exam which showed slurred speech as well as facial droop. Shortly after, the patient fell into a comma. After monitoring patient X and realizing patient X had dysphagia, the dietitian decided the best option for patient X, in order to consume the food and medication, was to insert a nasogastric tube. By doing so the team monitored the patients’ food intake and medications to make sure patient X would not aspirate. The Registered Nurse (RN) made sure patient X’s teeth were brushed and nose cleaned regularly to avoid further complications. The Registered Dietitian checked for any leakage or blockage in the tube as well as making sure patient X’s head was elevated during and after feeding.

Month 1- In attempts to treat and nourish patient X back to regular daily living, the RD monitored the prealbumin level as well, as the bowel movement. Before feeding patient X, the RD connected a syringe to the nasogastric tube and drew back to withdraw the contents from the stomach

to read the amount of residual in the patients' stomach, and then inserted the contents back in the patients feeding tube. The RD started at 20 mL/hr, titrate by 10-20 mL/hr every 4 hours to reach the goal. Patient X was required to receive free water flushes every 4 hours of 250 mL. Patient X macronutrients were logged at 2016 kcal, protein at 93 gm, carbs at 285 gm, and the total fat at 66 gm. Patient X fluid for water had to be at 1356 mL, water flushes at 1500 mL, the total was at 2856 mL and the daily was 2800 mL. Before feeding patient X, the RD checked for the residuals which had a yellow color to it. Then the Registered Dietitian was able to feed patient X, given no signs of vomiting. Two hours later the nurse went to check the bowel movement in patient X, advising the Registered Dietitian that patient X was constipated. When the registered nurse told the RD the issue, the team knew they had to increase the fiber and make sure patient X was receiving sufficient fluids.

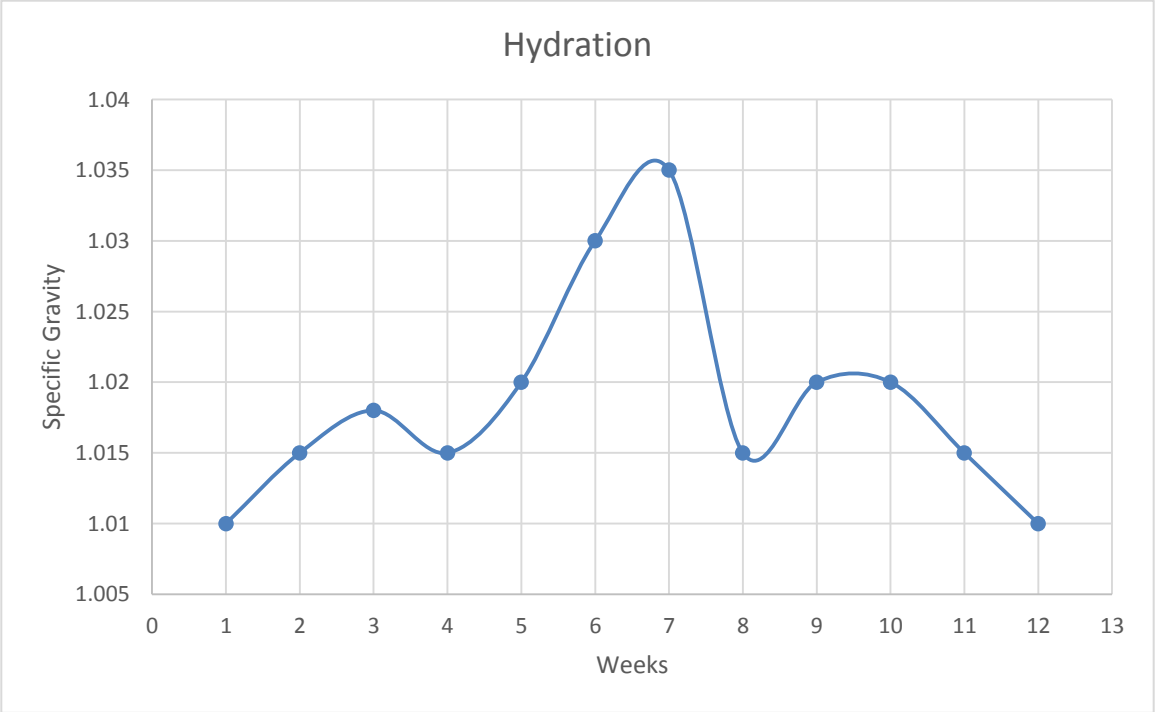
Month 2- After the patient gained conciseness, the Registered Dietitian witnessed patient X having stomach pains. At that moment the RD knew patient X was still constipated from the day before. As the Registered dietitian was able to consult with the nurse and was able to give patient X a stool softener. After a couple hours, patient X showed progress and the RD was able to continue with the feeding and assessments. The RD checked the residual of the patient and had to rinse the feeding tube out with 30 ml of water. When the residual is more than 200 ml, the RD waits to feed the patient. After 30 minutes the Registered Dietitian checked the residual again and it was still yellow and normal. Additionally, the RD checked the prealbumin range, which showed a normal range. The registered nurse told the RD that the stool softener worked for patient X and the bowel movements were normal thereafter. Patient X was also able to speak and not have slurred speech.

Month 3-After taking out the nasogastric tube feeding, patient X had movement in the left side of face where it was droopy and had already began speaking. Patient X had a lower residual as well as normal prealbumin and regular bowel movements. The speech pathologist did a swallowing and voice test on patient X. Patient X was able to pass the speech pathologists test and was able to keep the food

down. Before Patient X left the hospital, the Registered Dietitian needed to make sure X and the family were aware of what to do and educate them on the diet X would be on.

The RD proceeded to educate the family and patient X of the upcoming whole food plant-based diet required. Meaning only beans, berries, fruits, greens, flaxseed, nuts or any seed, whole grain, herbs and spices (low sodium) and needed to drink water and try moderate exercise. Thereafter, the registered dietitian made monthly follow ups to make sure that patient X and the family were following the diet education and to monitor patient X's weight and blood pressure as well as the prealbumin and fluid intake. Patient X was required to see the speech pathologist first to make sure that the speech and swallowing was improving.

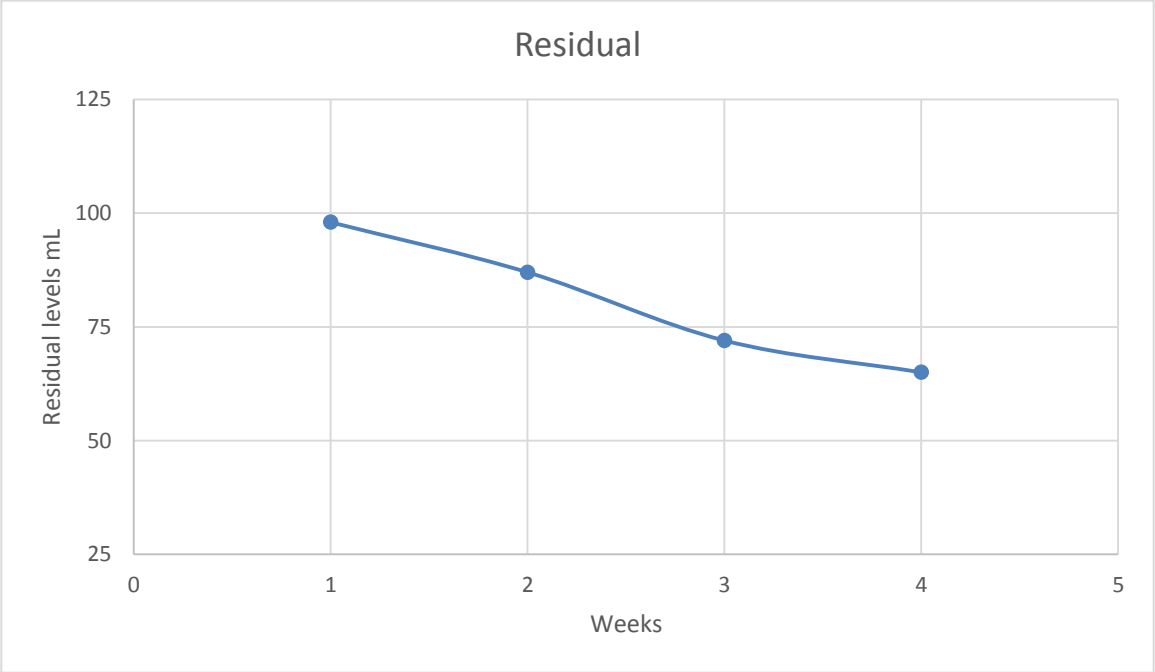
Results and Discussion



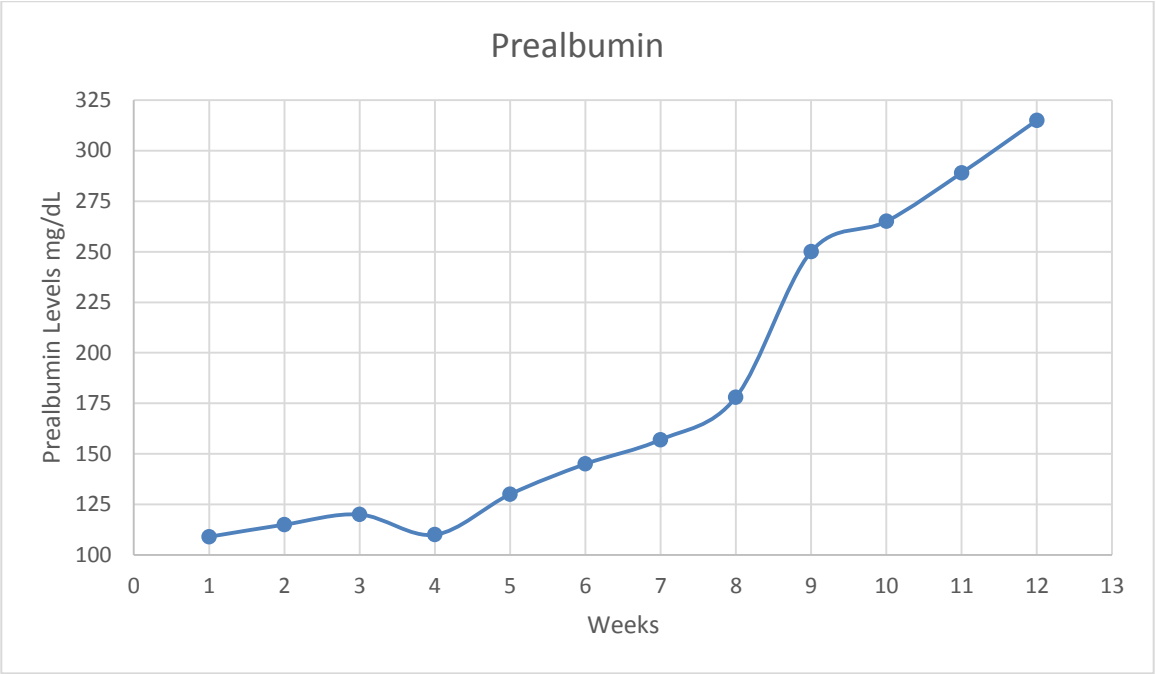
The subject started off in the first month and on week one with 1.010 specific gravity. Into the second week, patient X increased to 1.015 specific gravity. In the first month as well, but on the third week patient X increased another 0.003 specific gravity which lead X to 1.018. On the last week of the first month patient X ended with a 1.015 specific gravity.

In the second month, patient X started at 1.020 specific gravity, and then increased to 1.030 specific gravity. On the third week of the second month, patient X hydration level went up 0.005 specific gravity, which lead patient X to 1.035 specific gravity. On the last week of the second month patient X was left with 1.020 specific gravity of hydration levels.

In the last month monitoring patient X began with the hydration level of 1.020 specific gravity. On the second week patient X hydration level stayed the same, on the third week it went to 1.015 specific gravity. On the last day the hydration level was at 1.010 specific gravity.



Monitoring the residual for patient X on the last month started with a residual of 98 mL. On the second week the residual decreased by 11 mL and was recorded at 87 mL. In the third week the residual decreased another 15 mL and was left at 72 mL. In the final week of patient X stay the residual was normal at 65 mL.



Monitoring patient X's prealbumin levels for 12 weeks, on the first week patient X lab was recorded at 109 mg/dL. In the second week it went up 6 mg/dL and was recorded at 115 mg/dL. In week three patient X prealbumin was recorded at 120 mg/dL. In the last week of the first month patient X prealbumin was recorded at 110 mg/dL. In the second month the prealbumin went up in the first week by 20 mg/dL, being recorded at 130 mg/dL. In the second week of the second month the prealbumin was at 145 mg/dL. By the third week it went up by 12 mg/dL and was recorded at 157 mg/dL, on the last week of month two patient X was at 178 mg/dL. The last month of recording patient X prealbumin level started at 250 mg/dL and was increased in the second week by 15 mg/dL, to 265 mg/dL. In the third week patient x prealbumin level went up to 289 mg/dL, and the final record of week 4 was at 315 mg/dL. From the first week being at 109 mg/dL to the 12th week the prealbumin level increased to 315 mg/dL. The prealbumin level increased 206 mg/dL.

Conclusions

In week one, patient X had a fixed hydration level. In week two patient X was hydrated. The following week patient X was still having an increased hydration level. In week four, patient X had a fixed hydration level, leading into a dehydration level for the next three months where patient X was having irregular bowl movements reflecting the level of specific gravity from being at 1.015 and

increasing to 1.02 in week five and in week six increasing to 1.03 and in week seven it was at the highest at 1.035. In week eight there was a decrease in the hydration causing the decrease in the specific gravity. The RD then added more protein to patient X's diet and increased the water intake. In week nine and ten patient X had irregular bowl movements again due to dehydration levels. The RD increased patient X's protein and hydration levels again and continued to check the prealbumin and residual. After week ten, going into week eleven and twelve patient X hydration level was fixed because the Registered Dietitian and Registered Nurse were measuring his intake of fluids and nutrition. Checking the urination level was another way the RD and RN checked the hydration level of the patient. Patient X had stopped feeling constipated and was able to have regular bowl movements due to the increase of fluids added to the tube feed.

Monitoring the prealbumin levels with patient X the first week there was an increased risk resulting in low protein, the Registered Dietitian gave patient X protein through the tube feeding and the following week patient X prealbumin level increased, but not to normal ranges. For the following weeks the Registered Dietitian increased the protein levels to promote patient X to 150 to 360 milligrams per liter, which is normal range. Due to the low prealbumin levels, the registered dietitian was concerned that patient X would not receive the nutrition patient X needed as well as inflammation, liver disease, necrosis and certain digestive disorders, eventually the protein status went up as a result of increased protein in the tube feed. (AACC, n.d.).

The Registered Dietitian continued to monitor patient X's residual levels as well as the residual volume of patient X. By doing so, the RD used a 60 mL syringe. In the first week of month three the residual level was high, and the registered dietitian had to turn off the tube feed for patient X. About eight hours later the registered dietitian checked again and it was still high. The following week, the residual level was lower than the week before which correlated with the increase in the prealbumin levels. The next week the residual levels went down again, but patient X was still receiving tests to

measure residual levels every six to eight hours. The last week of monitoring the residuals for patient X showed the residual level was finally normal at sixty-five mL, as well as the prealbumin levels.

Having a Registered Dietitian on this case with a patient who was in a coma is highly recommended. The reason patient X was able to survive was because the Registered Dietitian monitored his prealbumin levels and was able to give patient X the correct amount of nutrition X needed. A study in Hamilton, Ontario shows how family physician practices had registered dietitians help increase the care of patient's nutrition, expand the nutritional services needed, help strengthen the community and hospitals with nutritional programs, as well as increase the knowledge of diet and nutrition in family physicians. (Crustolo, 2005). Studies show that having poor nutrition can also correlate to a patient being prolonged in the hospital. (Hejazi, 2016). Also, having a registered dietitian on a case like this helps with malnutrition, since it is the most important factor with any patient that is in a coma. (Hejazi, 2016)

Medical errors can lead to a poor outcome on patients, when as health care providers, high quality care is expected. Working as a team helps health care providers share responsibilities and understand the role of each team member. Poor communication between physician and patients, or health care provider to health care provider can cause a medical error. The best way to have and work with an effective team is understanding every team member role, communication between team members as well as communication with patients (Babiker, 2014)

In the United States, health care facilities are not as safe as expected due to medical errors such as improper transfusions, surgical procedures, mistaking the patients records with another patient, burns, falls, and pressure ulcers (Institute of Medicine, 1999). There is a four-tier approach to achieve better safety for patients as well as team members (Institute of Medicine, 1999). The first approach is to establish a focus on leadership and to enhance the knowledge of safety into team members (Institute of Medicine, 1999). The next one is to learn from the errors that are made, by reporting it publicly into the system (Institute of Medicine, 1999). The third one is raising expectation and performance levels to

a higher standard for safety and lastly implementing the safety system in every organization to have safe practice (Institute of Medicine, 1999). This is a roadmap to help healthcare facilities have a safer system in place (Institute of Medicine, 1999). Having a roadmap for health care facilities and the health care team will help decrease medical errors of communication with knowing the dietitian's medical knowledge.

1.5 million people are injured to medication errors annually. Every year in Washington, hospitals spend about $3.5 billion on medical costs related to drug injuries. The National Academy of Science wrote a recommendation that includes steps to protecting the patients as well as the medical staffing team. It also has steps that patients should take to protect themselves. An estimate of at least one patient from one hospital has a medical error per day. Every medical error does not lead to death, but all errors should be prevented. (National Academy of Science, 2006)

Caring for the patient is the number one priority in any healthcare facility. The Interprofessional Education and Interprofessional Practice helps health care providers focus on the patient's improvement and final outcome. Studies have shown that when health care professionals work together and communicate, a patient's care improves drastically. Interprofessional Education is for students to learn about each other and to reach a goal on a patient's quality of care. Interprofessional education and practice both focus on teamwork, understanding other roles and responsibilities from every team member, communication and clinical practice. This can help a student's career by learning to collaborate, preparing students for employment, and educating the health care system. By having an understanding, this can increase the patient's satisfaction, improvement on health outcomes, reduced cost of care and reduced duration of treatments.

Registered Dietitians need to have a comprehensive understanding of every team member's role as well as communicating with the nurses, physicians, and speech therapist. Registered Dietitians and Speech therapist must have a clear understanding of what each member needs to do since the work is interrelated with treating a stroke patient. The research for patient X shows how the registered

dietitian needs to care and treat the patient as well as communicate with the nurse about the patient's nutrition. The nurse also needs to communicate with the registered dietitian to let the RD know what medications are being given. The speech therapist and registered dietitian will evaluate and run tests on the patient to see if he/she can swallow or even communicate. Having interprofessional education can help every team member understand what each and every team member does as well as caring for the patient the best way the health care team can. When the speech therapist runs test on how the patient swallows the registered dietitian needs to be there as well, to see what the RD needs to do to help the patient take medications and well as getting all the nutritional needs as well. Knowing and understanding and working as a team and communicating is the best way to care for any patient and bring them back to better health.

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