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ONE DAY IN THE LIFE OF AN INDIAN PHARM D STUDENT IN AN AMBULATORY CLINIC IN THE USA

I entered the United States as an Exchange Student to the University of Findlay (UF), Ohio, to experience first-hand pharmacy practice in a country with advanced and modern healthcare. The Student Exchange was started a few years ago between the Karnataka College of Pharmacy in Rajiv Gandhi University and the University of Findlay, Ohio, USA.

I spent one day at the “Coumadin® (generic Warfarin) Clinic” at Blanchard Valley Medical Associates (BVMA) which is a multidisciplinary private practice located in Findlay, Ohio. I was greeted in the lobby by Brendon Cannon, a PharmD candidate from the University of Findlay, who took me to Dr. Surowiec, one of the pharmacists running the clinic.

Dr. Surowiec, also an alumni of UF, has a shared position at the University and the clinic and she works at BVMA every Friday to oversee the Coumadin Clinic. Dr. Surowiec, along with two other Ambulatory Care Pharmacists, are responsible for seeing several hundred patients for a variety of disease states, but mainly for warfarin management.

Warfarin management is achieved by determining International normalized ratio (INR). INR is an assay method to standardize the Prothrombin Time (PT). The chief reason being: PT is very inconsistent, even when performed on identical specimens by different laboratories. The concept behind the INR is that variation between thromboplastins could be normalized by calculation. Measuring an INR while on anticoagulants (blood thinners) is considered a standard practice now. The target range for INRs during warfarin administration is 2 to 3 but it may be as high as 2.5-3.5 depending on the indication for anticoagulation.

Patients are scheduled throughout the day with the first patient arriving at 8 AM. For each patient, the following procedure was followed - Brendon (or the student for the month) would go and greet the patients in the waiting lounge and bring them over to the clinic patient room. Upon arrival to the room, Brendon would ask a series of questions that are relevant for optimization of warfarin administration. These questions were primarily meant to test the compliance of the patients to the drug therapy involved along with any upcoming events that would require alteration to the current therapy. The questions included references to the dose of warfarin the patients were taking, if they had missed or taken any extra doses, any change in green leafy vegetables of their diet from their last visit, any signs for severe bleeding, bruising, discomfort or swelling, or any cases of light headedness, dizziness or weakness.

Simultaneously, Dr. Surowiec would be performing a finger stick International Normalized Ratio (INR) on the patient and simultaneously paying careful attention to the patients' answers. Any responses that were not clear or required clarification Dr. Surowiec would intervene and ask additional questions based upon her expertise on the subject. The instrument that she used to perform the finger stick INR was called CoaguChek® XS Plus Meter. This procedure for INR determination was minimally invasive but the outcome was comparable to venous laboratory determination of an INR. Unlike traditional methods that require a venous puncture and a larger amount of time, this process only required Dr. Surowiec to prick the tip of a finger and then used capillary suction blood drawn to the test strip that was inserted into the meter for reading the INR value. The meter displays the result in about 30 seconds.

Based on the INR readings of the CoaguChek® meter and answers to the questions asked, Dr. Surowiec would make a clinical decision about whether to either modify or continue the dosage of warfarin and then determine the date of the next INR check. She was authorized to do these activities based on consult agreements established with the physicians at the practice.

So, as the day progressed, patients started flowing into the clinic and Dr. Surowiec would repeat her routine with each patient. Each patient had an electronic profile in the computer that had the entire details of all their previous visits. A software program named CoagClinic® would keep track of all the required information along with previous INR values. The majority of patients had their INR values within the range, the reason being frequent check-ups and adherence to the detailed patient education that was being offered. One of these patients that I got to interact with that day had an INR value



below her estimated normal range even though she was rightly adhering to medication and diet. Upon Dr. Surowiec's intervention, we realized the reason might have been her frequent long distance travels lately. To adjust her levels, her weekly warfarin dosage was increased, and the patient was scheduled for her next visit after only 2 weeks.

I also got the opportunity to attend patient sessions with Dr. Catherine Meier, PharmD who has been providing patient care at BVMA since her commencement in 2009. She too followed a similar procedure to that of Dr. Surowiec. One of her patient's that we saw that day had his normal INR range readjusted to 2.5 to 3.5 due to presence of an artificial heart valve that required higher INR values for anticoagulation. I also learned that day about how the patients that relied upon certain insurance companies would require the pharmacist to send a fax to activate their mail order pharmacy to allow a 90 day supply of their medications. Another one of her patients who was soon undergoing a surgery for pain in her back required her warfarin to be held as her surgeon required her INR level below 1.2 in order to perform the procedure.

While I did not get to witness any patients who had extreme levels of fluctuations of INR values, Dr. Meier was kind enough to share with me her first-hand clinical experiences of how she managed patients with INR levels on warfarin as low as 0.8 with Low Molecular Weight Heparins (LMWH) such as Lovenox (generic Enoxaparin) and in cases where the INR values were unusually high requiring a dose of Vitamin K (2.5mg - 5mg orally) to be administered.

My review on matters after involvement with the clinic for a day would emphasize on positives to patient health after obtaining a routine, supervised and individualized care about their blood coagulation. The involvement of Registered Pharmacists to carry out such tasks increased my pride in the pharmacy profession and opened up new possibilities in my own career. This point-of-care INR service enables the ability to free up physicians' time for patient care, while at the same time advancing the scope of pharmacy practice and improving patient outcomes. This day made me realize the true value of my training.

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