C3L12 - Ashley Hay

(0:05 - 0:15)

Hello, welcome back. Ashley Yeh here with Health Tech Academy. And we begin course three with a lesson in perioperative pharmacology.

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So pharmacology basically is just the study of drugs, medication, right? And when we use the term drug, it's a substance intended for the use in diagnosis, cure, relief, treatment, or prevention of disease. They can also be used to affect the structure or function of the body. So there's a lot of different sources of drugs that we talk about and drug information resources.

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So definitely make sure that you take note of those just for professional reasons in the future, things like a PDR, physician's desk reference. And there's also a US Pharmacopedia and national formulary, things like that are helpful along with some other online drug resources and pharmacology textbooks that you might come across. It is important to know in terms of drug regulations that there are regulations at both the state and the federal level.

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So at the federal level, that's the FDA, so the Food and Drug Administration. So they oversee federal regulation of drugs, substances, and also devices. So just important to take note there.

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There are quality standards as well as international standards that all of these are held to. And then just knowing the different types of drugs and the different types of controlled substances as well. So there's schedule one through five and basically controlled substances really carry a high risk of abuse or addiction or they have no medical use at all, which would really not apply to us because if they don't have medical use, they would not be available to us in our particular department.

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But schedule one through five, they are given that. And then often these controlled substances are locked away and need specific passwords and different providers to be able to unlock them. There's also different pregnancy categories.

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So these are either A, B, C, D, or category X. And these basically carry potential risks to the foetus. So knowing those differences and what that means in terms of a pregnant patient, very

important, especially to plan out your cases. There's also herbal remedies and food supplements which are differently regulated than your standard types of medications, but it's important to keep in mind that these can interact with medications.

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So if you're ever kind of looking at a patient history and realise that they may be on some sort of herbal remedy or supplement, it's important to make sure that that has been looked at to make sure that they don't interact with anything. And then of course, there's prescription drugs, which we know well in the healthcare space, as well as over-the-counter drugs. So prescription drugs require a prescription, right? Authorisation by a provider with that governing authority.

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And then over-the-counter meds are available at the store. So if, for example, you were to go to your local pharmacy and you wanted to get something like Tylenol for a headache or Benadryl for allergies, those are known as OTC or over-the-counter medications. Really important to know is drug identification.

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So knowing the difference between a generic versus a trade name. So knowing that the generic name is not capitalised and the trade name is always known as the brand name. So whatever they're selling the name by a company.

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And I can show you kind of a quick example here. So here we see the drug Ansef. This is an antibiotic that we use, but you will see here Ansef is the trade name.

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And then we'll see the generic name listed here, right next to where it says 1 gramme. And that is the generic, right? And we know that because it's not capitalised and it typically is the active ingredient that makes the drug work. So another good example of this that they also discussed in the lesson in the slide deck there was Tylenol, right? So Tylenol is the trade name, but an example of the generic name of that is acetaminophen.

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And there's a really great video, if you haven't watched it in full, please do on reading medication labels. Because in drug labelling, there is a multitude of information and often we can overlook some really important aspects of it. So not only the names of the drug, the proprietary and generic name, but also the form of dosage, the amount that's contained in the package, the dosage per pill and what should be given to a standard adult patient perhaps.

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There's also a barcode, there's a lot number, which is really important. If there is any sort of adverse events or things like that, that get tracked back to a certain lot number, then the company has to take certain steps to remedy that. There's also an expiration date, which you should always be checking.

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And then there's other items in there, like indications for use and things like that. So what you really wanna be more aware of is just your drug action terms. So what is an indication? What does that mean for a drug? So this is basically, if a drug lists an indication, that just shows us what it treats or cures.

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A contraindication, this explains to us how the drug should not be used. The onset is how long it will take until the drug starts to work, right? Until the time until effect, basically. Peak effect or a drug peak, that is the time until the maximum benefit.

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There's also something called a drug half-life, which is basically the time it takes for your body to excrete half of the amount of medication. So for example, if something was to completely be out of your system in 48 hours, typically the half-life of that drug is 24 hours, right? Because that's half the amount of time until it's totally out of your system. So knowing things like that.

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Also, duration, adverse effect. What is an adverse effect versus a side effect? Do you know the difference? A side effect is like unexpected, sorry, expected perhaps for that specific drug, but maybe unwanted effects, right? Like, oh, this drug is known to cause nausea. So if you had a patient that was on this particular medication that's known to cause nausea, and they let you know, hey, my stomach isn't feeling too great.

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You can let them know, yeah, that's an unfortunate, but expected side effect of this medication. Let's see if there's a few ways that we can help remedy that, whereas an adverse effect is a potential harmful effect of that medication. So just really being aware of all of those terms will definitely help you.

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Knowing just how drugs work in general and the terms behind that. So there is a difference between pharmacokinetics versus pharmacodynamics. Pharmacokinetics are basically like

changes to the drug related to like absorption or distribution, how it's kind of being distributed throughout the bodily tissues, right? And what that means.

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How is that drug being metabolised maybe in the liver or the kidneys? How is it being excreted out of the body? Whereas pharmacodynamics is a little bit different. This is where is the drug working at the site of action, right? If we're giving an anti-nausea maybe to shut down some receptors in the brain that trigger nausea, that's kind of what we're looking at there. And then also, you know, when is the max effect and things like that? So yeah, just different kinds of receptors and how the drug is working.

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So knowing those kind of important terms like we just talked about, excretion, which is elimination of the drug or clearance of the drug out of the body. All of those things will definitely help you understand that. Knowing a few just really basic measurement equivalents will be helpful.

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And if you like, you know, just searching ones that are really specific to healthcare, I would definitely recommend that as a nice quick little tip. And yes, definitely, absolutely being very comfortable with your drug rights. So drug rights are used to prevent medication administration errors.

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And these rights should be checked prior to giving any kind of medication. So typically, you know, this is falling on the nurse, the doctor or the pharmacist, right? But ultimately they are being given to the patient. So, you know, you are a part of this interdisciplinary team and we wanna make sure that we're all kind of looking out for the patient's best interest and monitoring the patient for anything that may occur after we've administered a medication.

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So you wanna make sure that you're really comfortable and you know all of the rights of drug administration right off the bat. So these include right drug. Are we giving the right medication? Right patient.

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Are we checking the wristband and making sure that this patient is the intended patient to get this prescribed medication? The right dose. Are we making sure that the dose in milligrammes is exactly what was ordered and appropriate for the patient? And that can even be things like if it's height and weight based, you know, are we double checking that math? The right route. So

what that means is, is this drug supposed to be given orally? Are we supposed to be giving it intravenously, right? Through an IV catheter? Are we giving it rectally? Are we giving it, there's a number of different ways.

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So making sure that we're doing that. Right time. Is this drug being given at an appropriate time? So if for example, a drug is administered every six hours, you know, has it been six hours since the last administration? Is this drug prescribed only at bedtime? You know, but somebody is trying to give it during the day.

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All of that. The right indication. Are we giving it for the intended use? And then of course, right and proper documentation.

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Are we properly documenting that this drug was given? And then, you know, dispensing drugs onto a sterile field, you know, we're making sure as a surgical tech that we are reciting that drug name, the dose, the amount, the strength, the expiration date. So that way, you know, everybody can do a double check and make sure that the rights of medication administration are being followed. Okay.

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I think that was kind of really just the most important things to look at in here. Please, you know, don't take it as what you should only study. I just try to point out or maybe give a little more explanation of things that are pretty important and maybe you need some additional examples, but be sure that you're going through the entire lesson content, all of the slides, the videos using outside additional resources whenever they're provided.

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And then of course, making sure that you're reading the corresponding ebook chapter. All right, I'll see you next time.