The Course Book On Medical English

张长江◎编著

医学英语教程

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English Course Book On Medical Science

医学英语教程

（适用于医学院校研究生）

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作　　者 张长江　编著
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前 言

《医学英语教程》根据《研究生英语教学大纲》的要求，结合医学类硕士英语教学的特点，以突出实用性，强调语言运用能力为目的而编写。本书共有12个单元，每个单元又包含两篇课文，其中课文一是英语医学文献的研读，旨在培养研究生的阅读和实际应用能力；课文二是科研论文写作指导，目的是提高学生撰写科研论文的水平。

本书的主要特点如下：

1.选材新颖，内容丰富，题材广泛，有利于拓宽医学类硕士生在英语方面的视野及知识面。

2.语言规范，难度适中，针对性强，符合医学类硕士生的外语教学要求。

3.内容实用，循序渐进，重视基础，有利于医学类硕士生打好语言基础，进行语言实践，并进一步提高英语水平。

4.体现了全新的教学理念，以学习者为中心，采用交际法教学，教材以主题为中心，练习以任务为基础，创造自主学习的机会。

本教材不但适用于医学类类硕士研究生，还适用于各类研究生课程班学员、在职申请硕士学位的自学人员等。

由于编者水平有限，时间紧迫，错误和疏漏之处在所难免，恳请相关学者及读者批评指正。

Content

UNIT ONE

TEXT 1

Antibiotics

Antibiotics, also known as antimicrobial drugs, are chemical substances that kill or suppress the growth of microorganisms, but will not seriously harm the person taking it. For centuries before the antibiotic was discovered, infections like pneumonia and tuberculosis caused by bacteria were the leading causes of diseases and death. Lots of doctors and scientists had devoted themselves to finding a method to treating wound infections, but in vain. One day in 1928, when Alexander Fleming came back from a vacation, he noticed that something had "grown" on one of the culture plates which he left unwashed. It was mould, and the staphylococci were not growing around it! Apparently, the mould was secreting a substance which prevented these harmful bacteria from growing. The substance was named penicillin, because the fungal contaminant was identified as Penicillium notatum. This remarkable discovery was the beginning of the antibiotic era which revolutionized medical care and made it possible to cure diseases caused by bacteria such as pneumonia, tuberculosis, and meningitis–saving the lives of millions of people around the world.

There are several kinds of antibiotics, including penicillins,

cephalosporins, tetracyclines, erythromycin, aminoglycosides, and antifungal antibiotics. The various antibiotics differ in antibacterial spectrum, mechanism of action, pharmacokinetic properties, potency, and toxicity. Therefore, it is essential for the doctors to understand the general principles of antibiotic therapy. In addition, before administering antibiotics, doctors must be familiar with particular drugs and their actions and effects.

Penicillin was one of the first antibiotics to be used in clinical medicine and remains the drug of choice today. It is also considered to be the safest drug available. Clinically, there are now about twenty penicillin antibiotics which are used to treat such common infections as tonsillitis, strep throat, urinary tract infections, and boils, as well as some very serious infections such as meningitis, pneumonia, and typhoid fever. Penicillins are not thought to have any adverse effect when used in pregnant or breast-feeding women. While the penicillin antibiotics are generally very safe, about 15% of the population is allergic (usually a rash) to this class of antibiotics. In addition to allergic reactions, other possible adverse effects of penicillin may include one of the following: gastrointestinal upset, liver disease, kidney reactions (very rare), and neurotoxicity from very high dose treatment (very rare).

Cephalosporins are very similar to penicillins in their chemical structures. They are usually effective against a broader range of bacteria than the penicillins and are often used in cases of allergies to the penicillin. Cephalosporins are used in treating skin infections, bone infections, upper respiratory tract infections, gonor-

rhea, genitourinary tract infections and acute prostatits. The cephalosporins are available to treat both adults and children. Common side effects involve mainly digestive system, such as mild stomach cramps or upset, nausea, vomiting, and diarrhea. More serious but infrequent reactions include allergic reactions, especially when people have a penicillin allergy, skin rashes, and serious colitis. If this happens, it is important to contact the doctor immediately.

The tetracycline antibiotics called "broad spectrum" antibiotics because they are effective against a wide variety of bacterial infections, including pneumonia and other respiratory tract infections, infections of skin, a variety of sexually transmitted diseases (STD), Rocky Mountain Spotted Fever, acne, and for the treatment and prevention of anthrax (after inhalational exposure). The tetracyclines should not be taken by pregnant women or by children younger than 8 years old because they will discolor (darken) the developing teeth of the infants and children. Do not take tetracycline with food, especially dairy products because their effectiveness will be greatly diminished.

Erythromycin belongs to the macrolide group of antibiotics and is probably the second safest antibiotic after penicillin G. It is a good alternative for people who are allergic to penicillins. Erythromycin is indicated in the treatment of infections such as diphtheria, pneumonia, Legionnaires' disease, strep throat, nongonococcal urethritis, and pertussis (whooping cough).

Aminoglycosides, including gentamiein, streptomycin, tobramycin and the like, are particularly active against aerobic and

gram-negative bacteria. Aminoglycosides are used in the treatment of severe infections of the abdomen and urinary tract, as well as bacteremia and endocarditis. They are also used for prevention, especially against endocarditis. The toxicities of aminoglycosides include nephrotoxicity and ototoxicity.

Fungal infections such as athlete's foot, ringworm, and vaginal yeast infections are usually localized, slow to spread, but also take longer to cure. They are usually treated by the application of antifungal drugs to the affected area. There are many synthetic antifungals which are very effective against topical fungal infections but there are very few drugs available to effectively treat systemic infections which are often present in immune compromised patients like those suffering from AIDS.

Although antibiotics stop some infections and save lives, they must be taken wisely. When antibiotics aren't used the right way, they can do more harm than help. Nowadays, people use antibiotics for preventative use to prevent future occurrence of an infection. In doing this, the chance of resistance increases. Antibiotic resistance is now a worldwide public health issue due to improper use and abuse of antibiotics. To make antibiotics work best, it is important to follow the instructions.

First of all, antibiotics only work against infections caused by bacteria and viral diseases are not cured by antibiotics. Do not take an antibiotic for a viral infection like a cold or the flu. Secondly, it is very important to follow the special instructions for certain antibiotics exactly in order to get the maximum benefit of the antibiotic. Be sure to take the right amount for each dose.

Thirdly, to help clear up the infection completely, keep taking this medicine for the full time of treatment, even if the symptoms improve after only a few days. This is a point which cannot be overemphasized. How long and how much antibiotic will be required to completely cure the infection is based on knowledge of the infection. Failure to comply with the prescribed dose and duration of therapy will often result in a relapse and may lead to a more resistant strain of the bacterium. At last, if there is any antibiotic remaining at the end of the prescribed therapy, discard it. Do not save it and attempt to use it another time because many antibiotics will degrade over time and cause unwanted side effects or simply will not be effective.

Exercises

I. Look up dictionaries and find out the pronunciation and meaning of the following new words and expressions

antibiotic	antimicrobial	microorganism
pneumonia	tuberculosis	mould
staphylococcus	penicillin	contaminant
meningitis	cephalosporin	tetracycline
erythromycin	aminoglycoside	antifungal
pharmacokinetics	property	potency
tonsillitis	typhoid	allergic
gastrointestinal	upset	neurotoxicity
gonorrhea	genitourinary	prostatitis
cramp	nausea	rash
colitis	acne	anthrax

inhalational	dairy	macrolide
diphtheria	legionnaire	urethritis
pertussis	whooping	gentamicin
streptomycin	tobramycin	aerobic
bacteremia	endocarditis	nephrotoxicity
ototoxicity	ringworm	relapse
penicillium notatum,		strep throat
typhoid fever		adverse effect
sexually transmitted disease,		
Rocky Mountain Spotted Fever		athlete's foot
Legionnaires' disease		whooping cough

II. Answer the following questions according to the text A

1. What did Dr. Alexander Fleming find after a vacation? And how?

2. What are the general principles of antibiotic therapy?

3. Why should the antibiotics be taken carefully?

4. What are the kinds of antibiotics?

5. What is the other name of "the tetracycline antibiotics"?

6. What are the instructions to make antibiotics work best?

III. Translate the following sentences into Chinese

1. For centuries before the antibiotic was discovered, infections like pneumonia and tuberculosis caused by bacteria were the leading causes of diseases and death. Lots of doctors and scientists had devoted themselves to finding a method to treating wound infections, but in vain.

2. The various antibiotics differ in antibacterial spectrum, mechanism of action, pharmacokinetic properties, potency, and

toxicity. Therefore, it is essential for the doctors to understand the general principles of antibiotic therapy.

3. Cephalosporins are very similar to penicillins in their chemical structures. They are usually effective against a broader range of bacteria than the penicillins and are often used in cases of allergies to the penicillin. Cephalosporins are used in treating skin infections, bone infections, upper respiratory tract infections, gonorrhea, genitourinary tract infections and acute prostatits.

4. Erythromycin belongs to the macrolide group of antibiotics and is probably the second safest antibiotic after penicillin G. It is a good alternative for people who are allergic to penicillins.

5. Although antibiotics stop some infections and save lives, they must be taken wisely. When antibiotics aren't used the right way, they can do more harm than help. Nowadays, people use antibiotics for preventative use to prevent future occurrence of an infection.

6. First of all, antibiotics only work against infections caused by bacteria and viral diseases are not cured by antibiotics. Do not take an antibiotic for a viral infection like a cold or the flu. Secondly, it is very important to follow the special instructions for certain antibiotics exactly in order to get the maximum benefit of the antibiotic.

TEXT 2

Writing a Scientific Paper: How to Write the Abstract(Ⅰ)

An abstract is a miniature version of the paper. It should provide a brief summary of each of the main sections of the paper —

Introduction, Materials and Methods, Results, Discussion. Put in other words, it should provide the main story and a few essential details of the paper so as to make the summary readable and full of sense when read alone. It should normally not exceed 250 words in length. Different medical journals may present abstracts different in style. Some now present abstracts of a single paragraph; others now run "structured" abstracts consisting of a few brief paragraphs.

Follow the guidelines below for writing a good abstract

· State the background information about the investigation briefly.

·State the principal objective(s) and scope of the investigation.

· Describe the methods employed.

·Summarize the results.

· State the principal conclusion(s).

·Write it clearly and concisely.

·Avoid abbreviations or acronyms, unless absolutely necessary.

·Make it self-contained, e.g. do not contain any references to the literature or to figures and tables in the body of the paper.

Read the following two example abstracts and familiarize yourself with the layout

Example Abstract 1

Tumor antigen-specific T cell tolerance limits the efficacy of therapeutic cancer vaccines. Antigen presenting calls mediate the induction of Tcell tolerance to self-antigens. We therefore assessed the fate of tumor-specific $CD4^+$ T cells in tumor-bearing recipients after in vivo activation of antigen-presenting cells with antibodies against CD40. Such treatment not only preserved the responsive-

ness of this population, but resulted in their endogenous activation. Established tumors regressed in vaccinated mice treated with antibody against CD40 at a time when no response was achieved with vaccination alone. These results indicate that modulation of antigen-presenting cells may be a useful strategy for enhancing responsiveness to immunization. (From: *Nature Medicine Volume* 5'Number 7 July 1999)

Example Abstract 2

Background In patients who have received a cardiac transplant, the denervated donor heart responds abnormally to exercise and exercise tolerance is reduced. The role of physical exercise in the treatment of patients who have undergone cardiac transplantation has not been determined. We assessed the effects of training on the capacity for exercise early after cardiac transplantation.

Methods Twenty-seven patients who were discharged within two weeks after receiving a heart transplant were randomly assigned to participate in a six-month structured cardiac-rehabilitation program (exercise group, 14 patients) or to undergo unstructured therapy at home (control group, 13 patients). Each patient in the exercise group underwent an individualized program of muscular-strength and aerobic training under the guidance of a physical therapist, whereas control patients received no formal exercise training. Cardiopulmonary stress testing was performed at base line (within one month after heart transplantation) and six months later.

Results As compared with the control group, the exercise group had significantly greater increases in peak oxygen consumption

[mean increase, 4.4 ml per kilogram of body weight per minute (49 percent) vs. 1.9 ml per kilogram per minute (18 percent); P = 0.0 1] and workload [mean increase, 35 W (59 percent) vs. 12 W (18 percent); P = 0.01] and a greater reduction in the ventilatory e-quivalent for carbon dioxide [mean decrease, (13~20 percent) vs. 6 (ll percent); P=0.02].The mean dose of prednisone, the number of patients taking antihypertensive medications, the average number of episodes of rejection and of infection during the study period, and weight gain did not differ significantly between the groups.

Conclusions When initiated early after cardiac transplantation, exercise training increases the capacity for physical work. (N Engl J Med 1999; 340: 272–7.)

Exercises

Imitate the above abstracts, write an abstract in your own study fields.

UNIT TWO

TEXT 1

Cloning: Good Science or Bad Idea?

Just before President Clinton heads to the hospital for knee surgery, he asks another Bill Clinton to meet Russian President Boris Yeltsin at an overseas meeting. Meanwhile, a third Bill Clinton is out playing golf, while a fourth is helping daughter Chelsea with a science project.

Sound far-fetched? That day may come. Scientists in Scotland recently announced that, for the first time, they have cloned an exact copy of an adult mammal. The cloned baby lamb, named Dolly, has the exact same genes as the adult sheep from which she was cloned. In other words, the two are identical twins; only Dolly is six years younger. The goal of embryologist Ian Wilmut, the lead scientist, is to develop a way to raise identical sheep that produce medications for humans.

A week after Wilmut's announcement, scientists in Oregon disclosed that they has used a different technique to clone rhesus monkeys, primates that are close cousins of humans. Faster than you can say "Frankenstein", these accomplishments triggered a worldwide debate: Should scientists be allowed to clone animals? Will humans be next? Is cloning unethical and dangerous—or is it