INTRODUCTION

The tetracyclines are useful drugs for the obstetrician-gynecologist. They are broad spectrum antibiotics with a wide range of activity against many gram positive and gram negative organisms, both aerobes and anaerobes. In view of the multibacterial etiology of many soft tissue pelvic infections, this family of antibiotics has great theoretical appeal, and clinical studies have indicated effectiveness. Tetracyclines are bacteriostatic in their antimicrobial activity against bacterial pathogens. They act by inhibiting protein synthesis in susceptible bacteria at the 30 S ribosomal level within the cell.

A number of clinical modifications has been made in the tetracycline structure with pharmacologic and microbiologic changes in activity. The parent compound was derived from actinomycetes, and the chemical structure is shown in Fig. 1. This figure depicts the basic chemical structure of four

![Chemical structure of tetracyclines](image)

Fig. 1. The chemical structure of the tetracyclines.
benzene rings. With chemical alterations of the one and six positions, scientists developed the newer tetracyclines, minocycline and doxycycline (Fig. 1). These compounds are primarily eliminated in the gut and have a wider range of activity against anaerobic organisms than the parent tetracycline compound.

CLINICAL USE – HISTORICAL PERSPECTIVE

There have been wide swings in the popularity of the tetracyclines among Obstetrician-Gynecologists. Better understanding of the trends in the employment of antibiotics should give us more insight into the role of tetracyclines in medical practice in the 1980’s.

During the 1950’s, tetracyclines were frequently prescribed by the obstetrician-gynecologist. There was a number of factors for this popularity. The tetracyclines had a broad spectrum of antibacterial coverage, with good activity against organisms considered pathogens by clinicians in the 1950’s. These included gram negative aerobes, especially *Escherichiae coli* and *Neisseria gonorrhea*. The enthusiasm by physicians for the tetracyclines in this decade must be analyzed within the perspective of the antibiotics then available for prescription. Penicillins such as ampicillin, with a wider spectrum against gram negative aerobes, were not yet in use and the only available aminoglycoside was streptomycin with known eighth nerve and renal toxicity plus the rapid development of bacterial resistance when the drug was used. Another factor in the acceptance of tetracyclines was the lack of appreciation by most clinicians of the role of anaerobic bacteria in pelvic infection. Tetracyclines were effective against most aerobic pathogens. Within this framework of microbiologic understanding of pelvic infection it is understandable that tetracyclines were frequently prescribed. On a practical level, tetracyclines were versatile. They could be employed intravenously for hospitalized patients. In fact, a popular combination of antibiotics for seriously ill patients was intravenous penicillin and intravenous tetracycline. The oral form of the drug was also available. This meant that a prolonged course of the antibiotics could be employed in patients treated in the hospital because of infection, so that their treatment could be completed as an outpatient. Milder infections, not requiring hospitalization could be adequately treated with an oral form as an outpatient. In the 1950’s, tetracyclines were frequently prescribed as an adjunct to treatment in seriously ill patients as well as being standard therapy for less sick outpatients.

The 1960’s saw a tremendous drop in the overall usage of the tetracyclies by the obstetrician-gynecologist. A number of diverse factors contributed to this nationwide drop in popularity.