The purpose of this quiz is to provide a convenient means of self-assessment of your reading of the scientific content of this issue of JAOA. Enter your answers to the questions in the spaces provided so that you can easily check them with the answers that will be published next month.

To apply for CME credit, transfer your answers to the application form and answer sheet on page 284 and mail it to the CME office. So that you may complete this self-assessment in privacy, use only your member number to apply for

CME credit. The CME office will record only the fact that you have completed the selfassessment test. Any grading will be done by the Editorial Department only for the purpose of planning areas of study which may be helpful to cover in future issues of JAOA.

- 1. The human placental vasculature lacks direct innervation and is regulated by circulating or locally produced vasoactive substances.
 - (a) True. (b) False.

2.	Calcium channel blockers,
	antihistamines, or prostaglan-
	din synthetase inhibitors
	may have some beneficial ef-
	fect on reversing vasoconstric-
	tion in the fetus with signs
	of fetal distress.
	(-) m

STATE OF THE		
	_(a)	True.
1		Falso

3.	First-year osteopathic medi-
	cal students generally have
	lower fitness levels than mem-
	bers of the general popula-

(a)	True	
_(b)	False	

4. In the treatment of acute se-
vere asthma with β-adrener-
gic receptor agonist, the pre-
ferred route of therapy is
oral

1000	_(a)	True		
	(b)	Fa	186	

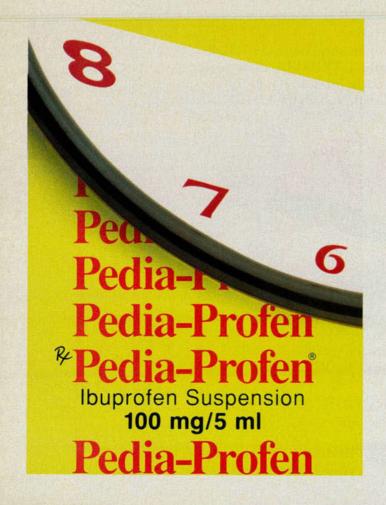
5.	Which of the following char-
	acterize the use of glucocor-
	ticoid therapy for the emer-
	gency treatment of acute se-
	vere asthma?

(a) Prompt use of	f glu-
cocorticoids reduc	es the
need for hospitalis	zation
and repeated	emer-
gency care.	

(b) The intravenous,
oral, and repository in-
tramuscular route are
all effective

-	(c) Glucocorticoid ther-
	apy suppresses the eosin- ophilic inflammatory re-
	sponse and reduces
	both the quantity and
	tenaciousness of the
	bronchial mucosa.

-(d)	All	of	the	above	are
tru	e.				





ON NSAIDs. ON CYTOTEC. ON FRIDAYS AT 3.

Some of these NSAID patients may never have been ready to roll without Cytotec. Only Cytotec has been proven to prevent NSAID-induced gastric ulcers.

Cytotec is indicated for patients at high risk of developing gastric ulceration, such as those with a history of ulcer, and patients at high risk of complications from gastric ulcer, eg, the elderly and those with concomitant debilitating disease.



Confidence to prescribe NSAIDs for high-risk patients

SEARLE

Please see adjoining page for reference and brief summary of prescribing information.



Considerations before you prescribe Cytotec

■ Because of its abortifacient property, Cytotec should not be prescribed for women who are pregnant. Patients must be advised of the abortifacient property and warned not to give the drug to others.



- Cytotec should be used in a woman of childbearing potential only if she is using effective contraceptive measures, has received oral and written warnings concerning the hazards of misoprostol, has had a negative serum pregnancy test within two weeks prior to beginning therapy, and will begin therapy only on the second or third day of the next menstrual period.
- Some patients may experience transient diarrhea, which usually resolves in about a week, or abdominal discomfort. Abdominal discomfort may persist in the absence of gastric ulceration.

BRIEF SUMMARY

CONTRAINDICATIONS AND WARNINGS: Cytotec (misoprostol) is contrain-CONTRAINDICATIONS AND WARNINGS: Cytotec (misoprostol) is contraindicated, because of its abortifacient property, in women who are pregnant. (See *Precautions*.) Patients must be advised of the abortifacient property and warned not to give the drug to others. Cytotec should not be used in women of childbearing potential unless the patient requires nonsteroidal anti-inflammatory drug (NSAID) therapy and is at high risk of complications from gastric ulcers associated with use of the NSAID, or is at high risk of developing gastric ulceration. In such patients, Cytotec may be prescribed if the patient

- · is capable of complying with effective contraceptive measures.
- has received both oral and written warnings of the hazards of misoprostol, the risk of possible contraception failure, and the danger to other women of childbearing potential should the drug be taken by mistake.
- has had a negative serum pregnancy test within two weeks prior to beginning
- will begin Cytotec only on the second or third day of the next normal menstrual

INDICATIONS AND USAGE: Cytotec (misoprostol) is indicated for the prevention INDICATIONS AND USAGE: Cytotec (misoprostol) is indicated for the prevention of NSAID (nonsteroidal anti-inflammatory drugs, including aspirim)-induced gastric ulcers in patients at high risk of complications from gastric ulcer, eg, the elderly and patients with concomitant debilitating disease, as well as patients at high risk of developing gastric ulceration, such as patients with a history of ulcer. Cytotec has not been shown to prevent duodenal ulcers in patients taking NSAIDs. Cytotec should be taken for the duration of NSAID therapy. Cytotec has been shown to prevent gastric ulcers in controlled studies of three months' duration. It had no effect, compared to placebe, or gastrointestinal pain or disconfirst assectivate with NSAID. compared to placebo, on gastrointestinal pain or discomfort associated with NSAID

CONTRAINDICATIONS: See boxed CONTRAINDICATIONS AND WARNINGS. Cytotec should not be taken by anyone with a history of allergy to prostaglandins. WARNINGS: See boxed CONTRAINDICATIONS AND WARNINGS. PRECAUTIONS:

PRECAUTIONS:
Information for patients: Cytotec is contraindicated in women who are pregnant, and should not be used in women of childbearing potential unless the patient requires nonsteroidal anti-inflammatory drug (NSAID) therapy and is at high risk of complications from gastric ulcers associated with the use of the NSAID, or is at high risk of developing gastric ulceration. Women of childbearing potential should be told that they must not be pregnant when Cytotec therapy is initiated, and that they must use an effective contraception method while taking Cytotec.

See boxed CONTRAINDICATIONS AND WARNINGS.

Patients should be advised of the following:
Cytotec is intended for administration along with nonsteroidal anti-inflammatory
drugs (NSAIDs), including aspirin, to decrease the chance of developing an NSAIDinduced gastric ulcer.

Cytotec should be taken only according to the directions given by a physician. If the patient has questions about or problems with Cytotec, the physician should

be contacted promptly.

THE PATIENT SHOULD NOT GIVE CYTOTEC TO ANYONE ELSE. Cytotec has been prescribed for the patient's specific condition, may not be the correct treatment for another person, and may be dangerous to the other person if she

were to become pregnant.

The Cytotec package the patient receives from the pharmacist will include a leaflet containing patient information. The patient should read the leaflet before taking Cytotec and each time the prescription is renewed because the leaflet may have been revised.

nave been revised.
Keep Cytotec out of the reach of children.
SPECIAL NOTE FOR WOMEN: Cytotec must not be used by pregnant women.
Cytotec may cause miscarriage. Miscarriages caused by Cytotec may be incomplete, which could lead to potentially dangerous bleeding, hospitalization, surgery, infertility, or maternal or fetal death.

Drug interactions: See *Clinical Pharmacology.* Cytotec has not been shown to interfere with the beneficial effects of aspirin on signs and symptoms of rheumatoid arthritis. Cytotec does not exert clinically significant effects on the absorption, blood levels, and antiplatelet effects of therapeutic doses of aspirin. Cytotec has no clinically significant effect on the kinetics of diclofenac or ibuprofen.

Animal toxicology: A reversible increase in the number of normal surface gastric epithelial cells occurred in the dog, rat, and mouse. No such increase has been observed in humans administered Cytotec for up to one year.

An apparent response of the female mouse to Cytotec in long-term studies at 100 to 1000 times the human dose was hyperostosis, mainly of the medulla of sternebrae.

Hyperostosis did not occur in long-term studies in the dog and rat and has not been seen in humans treated with Cytotec.

seen in humans treated with Cytotec.

Carcinogenesis, mutagenesis, impairment of fertility: There was no evidence of an effect of Cytotec on tumor occurrence or incidence in rats receiving daily doses up to 150 times the human dose for 24 months. Similarly, there was no effect of

up to 150 times the human dose for 24 months. Similarly, there was no effect of Cytotec on tumor occurrence or incidence in mice receiving daily doses up to 1000 times the human dose for 21 months. The mutagenic potential of Cytotec was tested in several in vitro assays, all of which were negative.

Misoprostol, when administered to breeding male and female rats at doses 6.25 times to 625 times the maximum recommended human therapeutic dose, produced dose-related pre- and post-implantation losses and a significant decrease in the number of live pups born at the highest dose. These findings suggest the possibility of a general adverse effect on fertility in males and females.

Pregnancy: Pregnancy Category X. See boxed CONTRAINDICATIONS AND WARNINGS.

Wanteratogenic effects: Cytotec may endanger pregnancy (may cause miscarriage).

Nonteratogenic effects: Cytotec may endanger pregnancy (may cause miscarriage) and thereby cause harm to the fetus when administered to a pregnant woman. Cytotec produces uterine contractions, uterine bleeding, and expulsion of the products

of conception. Miscarriages caused by Cytotec may be incomplete. In studies in women undergoing elective termination of pregnancy during the first trimester, Cytotec caused partial or complete expulsion of the products of conception in 11% of the subjects and increased uterine bleeding in 41%. If a woman is or becomes pregnant while taking this drug, the drug should be discontinued and the patient apprised of the potential hazard to the fetus.

Treatogenic effects: Cytotec is not fetotoxic or teratogenic in rats and rabbits at doses 625 and 63 times the human dose, respectively.

Nursing mothers: See Contraindications. Cytotec should not be administered to nursing mothers because the potential excretion of misoprostol acid could cause significant diarrhea in nursing infants.

Pediatric use: Safety and effectiveness in children below the age of 18 years have

not been established

ADVERSE REACTIONS: The following have been reported as adverse events in

subjects receiving Cytotec:

Gastrointestinal: The most frequent gastrointestinal adverse events were diarrhea and abdominal pain. The incidence of diarrhea ranged up to 40% but averaged 13% in clinical trials.

Diarrhea was dose related and usually developed early in the course of therapy (after 13 days), usually was self-limiting (often resolving after 8 days), but sometimes required discontinuation of Cytotec (2% of the patients). Rare instances of profound diarrhea leading to severe dehydration have been reported. Patients with an underlying condition such as inflammatory bowel disease, or those in whom dehydration, were it to occur, would be dangerous, should be monitored carefully if Cytotec is prescribed. The incidence of diarrhea can be minimized by administering after meals and a bedtime, and by avoiding coadministration of Cytotec with magnesium-containing

bedtime, and by avoiding coadministration of Cytotec with magnesium-containing antacids.

Gynecological: Women who received Cytotec during clinical trials reported the following gynecological disorders: spotting (0.7%), cramps (0.6%), hypermenority (0.5%), ensured the following gynecological disorders: spotting (0.7%), cramps (0.6%), hypermenority (0.5%) and dysmenorrhea (0.1%). Postmenopausal vaginal bleeding may be related to Cytotec administration. If it occurs, diagnostic workup should be undertaken to rule out gynecological pathology.

Elderly: There were no significant differences in the safety profile of Cytotec in approximately 500 ulcer patients who were 65 years of age or older compared with vouncer patients.

younger patients.

younger patients.

Additional adverse events which were reported are categorized as follows:

Incidence greater than 1%: In clinical trials, the following adverse reactions were reported by more than 1% of the subjects receiving Cytotec and may be related to the drug: nausea (3.2%), flatulence (2.9%), headache (2.4%), dyspepsia (2.0%), vomiting (1.3%), and constipation (1.1%). However, there were no significant differences between the incidences of these events for Cytotec and placebo

differences between the incidences of these events for Cytotec and placebo.

Causal relationship unknown: The following adverse events were infrequently reported. Causal relationships between Cytotec and these events have not been established but cannot be excluded: aches/pains, asthenia, fatigue, fever, rigors, weight changes, rash, dermatitis, alopecia, pallor, breast pain, abnormal taste, abnormal vision, conjunctivitis, deafness, tinnitus, earache, upper respiratory tract infection, bronchitis, bronchospasm, dyspnea, pneumonia, epistaxis, chest pain, edema, diaphoresis, hypotension, hypertension, arrhythmia, phlebitis, increased cardiac enzymes, syncope, GI bleeding, GI inflammation/infection, rectal disorder, abnormal hepatobiliary function, gingivitis, reflux, dysphagia, amylase increase, anaphylaxis, glycosuria, gout, increased nitrogen, increased alkaline phosphatase, polyuria, dysuria, hematuria, urinary tract infection, anxiety, change in appetite, depression, drowsiness, dizziness, thirst, impotence, loss of libido, sweating increase, neuropathy, neurosis, confusion, arthralgia, myselia, muscle cramps, stiffness, back pain, anemia, abnormal differential, thrombocytopenia, purpura, ESR increased.

Important note: Complete prescribing information should be consulted prior to use.

use.

DOSAGE AND ADMINISTRATION: The recommended adult oral dose of Cytotec for the prevention of NSAID-induced gastric ulcers is 200 mcg four times daily with food. If this dose cannot be tolerated, a dose of 100 mcg can be used. Cytotec should be taken for the duration of NSAID therapy as prescribed by the physician. Cytotec should be taken with a meal, and the last dose of the day should be at

Renal impairment: Adjustment of the dosing schedule in renally impaired patients is not routinely needed, but dosage can be reduced if the 200-mcg dose is not

Reference:

1. Graham DY, Agrawal NM, Roth SH. Prevention of NSAID-induced gastric ulcer with misoprostol: multicentre, double-blind, placebocontrolled trial. Lancet. 1988:2:1277-1280. A91CY6393T

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