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California Pharmacist 2016
A peer-reviewed publication of the California Pharmacists Association

CLINICAL PRACTICE CAPSULE

Recommendations for the Treatment of Vitamin D Deficiency

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ARTICLE HISTORY
Published: October, 2016

INTRODUCTION

Clinical Practice Capsules (CPC) are short summaries of diseases and syndromes written for all prescribers. The CPCs contain a description of the disease/syndrome, diagnostic criteria, treatment algorithms including options and prices. We welcome submissions from all students and practicing pharmacists. Multiple examples are available on the CPhA Journal website.

Vitamin D is obtained from a person's diet, dietary supplements, or sunlight exposure. Solar UVB radiation from sunlight converts 7-Dehydrocholesterol in the skin to form previtamin D_3, which is subsequently converted to vitamin D_3. Sources of vitamin D may also be found naturally in oily fish or from fortified foods. A deficiency in vitamin D, defined as a serum 25-hydroxyvitamin D level < 20 ng/ml, may be a predictor of bone health, risk for cancer, and other chronic disease.

Diagnosis

Screening for vitamin D deficiency using serum 25-hydroxyvitamin D levels is not required for asymptomatic adults or during pregnancy. There are certain risk factors that categorize patients as high risk for vitamin D deficiency, and screening is recommended for the following patient groups.

High Risk:

- Dark skinned
- Obese
- Medications enhance vitamin D metabolism
- Hospitalized on a general medical service
- Institutionalized
- Limited sun exposure
- Osteoporosis
- Malabsorption

Recommendation for Adults

Deficiency	Vitamin D_2 50,000 IU once weekly for 8 weeks. Repeat for another 8 weeks if 25-hydroxyvitamin D <30 ng/ml
Maintenance	Vitamin D_3 800 once daily

Choice of Therapy

The Endocrine Society Recommendations for Treatment and Prevention[1]

Deficiency – Vitamin D_2 or vitamin D_3		**Maintenance**
Infants and Toddlers 0-1 year	2000 IU/d for 6 weeks Or 50,000 IU once weekly for 6 weeks	400-1000 IU/d
Children 1-18 years	2000 IU/d for 6 weeks, Or 50,000 IU once weekly for 6 weeks	600-1000 IU/d
Adults	6000 IU/d for 8 weeks Or 50,000 IU once weekly for 8 weeks	1500-2000 IU/d
Obese, malabsorption, or medications affecting vitamin D metabolism	6000-10,000 IU/d	3000-6000IU/d

Pharmacologic Treatment Options

Drug	Strength	AWP Unit Price	30-Day Supply
Deficiency			
Vitamin D_2 (Ergocalciferol)	50000 IU	$0.20	$0.80
Vitamin D_3 (Cholecalciferol)	50000 IU	$0.15	$0.60
Maintenance			
Vitamin D_2 (Ergocalciferol)	400 IU	$0.02	$1.20
Vitamin D_3 (Cholecalciferol)	400 IU	$0.02	$1.20

*Pricing based on lowest AWP Unit Price for specified strength of generic drug

About the Author

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