WYTYCZNE W SUPLEMENTACJI I LECZENIU WITAMINĄ D W EUROPIE ŚRODKOWEJ

V Środkowo Europejski Kongres Osteoporozy i Osteoartrozy oraz XVII Zjazd Polskiego Towarzystwa Osteoartrologii i Polskiej Fundacji Osteoporozy, Kraków 20-21.09.2013
Streszczenia:
Ortopedia Traumatologia Rehabilitacja 2013, vol 15 (Suppl. 2).str 70-73

L32

WYTYCZNE W SUPLEMENTACJI I LECZENIU WITAMINĄ D W EUROPIE ŚRODKOWEJ

Płudowski P.[1], Karczmarewicz E.[1], Bayer M.[2], Carter G.[3], Chlebna-Sokół D.[4], Czech-Kowalska J.[5], Dębski R.[6], Decki T.[7], Dobrzańska A.[5], Franek E.[8], Głuszko P.[9,10], Grant W.B.[11], Holick M.F.[12], Yankovskaya L.[13], Konstantynowicz J.[14], Książyk J.B.[15], Księżopolska-Orłowska K.[16], Lewiński A.[17], Litwin M.[18], Lohner S.[6], Lorenc R.S.[1], Łukaszkiewicz J.[19], Marcinowska-Suchowierska E.[20], Milewicz A.[21], Misiorowski W.[22], Nowicki M.[23], Povoroznyuk V.[24], Rozentryt P.[25], Ruderka E.[26], Shoenfeld Y.[27], Socha P.[28], Solnica B.[29], Szalecki M.[30,31], Tałałaj M.[20], Varbiro S.[32], Żmijewski M.A.[33]

[1]Department of Biochemistry, Radioimmunology and Experimental Medicine, The Children’s Memorial Health Institute, Warsaw,

Poland

[2]Department of Pediatrics, Charles University Prague, Faculty of Medicine in Hradec Kralove, University Hospital Hradec Kralove, Czech Republic

[3]Imperial College Healthcare NHS Trust Charing Cross Hospital, London, United Kingdom

[4]Department of Propaedeutics of Paediatrics, Medical University of Lodz, Lodz, Poland

[5]Department of Neonatology and Neonatal Intensive Care, The Children's Memorial Health Institute, Warsaw, Poland

[6]II Department of Gynaecology and Obstetrics, Medical Center for Postgraduate Education, Warsaw, Poland

[7]Department of Paediatrics, University of Pecs, Pecs, Hungary

[8]Department of Internal Diseases, Endocrinology and Diabetology, Central Clinical Hospital MSWiA, Department of Human Epigenetics, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland

[9]Department of Rheumatology, Institute of Rheumatology, Warsaw, Poland.

[10]Andrzej Frycz Modrzewski KrakowUniversity, Krakow, Poland

[11]Sunlight, Nutrition and Health Research Center, San Francisco, CA, USA

[12]Department of Medicine, Section of Endocrinology, Nutrition, and Diabetes Vitamin D, Skin and Bone Research Laboratory, Boston University Medical Center, Boston, MA, USA

[13]Polyclinic Therapy Department, Grodno State Medical University, Grodno, Belarus

[14]Department of Pediatrics and Developmental Disorders, Medical University of Bialystok, Bialystok, Poland

[15]Department of Pediatrics, The Children’s Memorial Health Institute, Warsaw, Poland

[16]Department of Rheumatologic Rehabilitation, Institute of Rheumatology, Warsaw, Poland

[17]Department of Endocrinology and Metabolic Diseases, Polish Mother’s Memorial Hospital–Research Institute, Medical University of Lodz, Lodz, Poland

[18]Department of Nephrology, Kidney Transplantation and Arterial Hypertension, The Children’s Memorial Health Institute, Warsaw, Poland

[19]Department of Biochemistry and Clinical Chemistry, Medical University of Warsaw, Warsaw, Poland

[20]Department of Family Medicine, Internal and Metabolic Bone Diseases. Medical Centre for Postgraduate Education, Warsaw, Poland

[21]Department of Endocrinology, Diabetology and Isotope Therapy, Wroclaw Medical University, Wroclaw, Poland

[22]Endocrinology Department, Medical Center for Postgraduate Education, Warsaw, Poland

[23]Department of Nephrology, Hypertension, and Kidney Transplantation, Medical University of Lodz, Lodz, Poland

[24]D.F. Chebotarev Institute of Gerontology of National Academy of Medical Sciences of Ukraine, Kiev, Ukraine

[25]Third Department of Cardiology, Silesian Center for Heart Disease Silesian Medical University, Zabrze, Poland

[26]Belarusian Medical Academy of Post-graduate Education, Minsk, Republic of Belarus

[27]Zabludowicz Center for Autoimmune Diseases, Sheba Medical Center, Tel Hashomer Affiliated with Tel Aviv University, Faculty of Medicine, Israel

[28]Department of Gastroenterology, Hepatology and Eating Disorders, The Children's Memorial Health Institute, Warsaw, Poland

[29]Department of Diagnostics, Jagiellonian University Medical College, Krakow, Poland

[30]Department of Endocrinology and Diabetology, The Children's Memorial Health Institute, Warsaw, Poland

[31]Faculty of Health Science, UJK, Kielce, Poland

[32]Semmelweis University, Faculty of Medicine, 2nd Department of Obstetrics and Gynecology, Budapest, Hungary

[33]Department of Histology, Medical University of Gdansk, Gdansk, Poland

Wprowadzenie. Wyniki badań opublikowanych w ostatnich latach sugerują korzyści zdrowotne działania witaminy D na organizm człowieka na wszystkich etapach jego życia. Przeważająca ilość badań epidemiologicznych wskazuje na powszechność występowania niedoborów witaminy D w społeczeństwach Europy Środkowej. 1α,25-dihydroksywitamina D

[1,25(OH)$_2$D] – aktywna forma witaminy D – reguluje ekspresję 3-5% genomu. Jej synteza ograniczana jest przez dostępność substratu – 25(OH)D. Stężenie 25(OH)D jest miernikiem stanu zaopatrzenia w witaminę D, a podstawowym celem suplementacji witaminą D jest uzyskanie i utrzymanie odpowiedniego stężenia tego substratu dla zapewnienia potencjalnych korzyści zdrowotnych wynikających z szerokiego spektrum działania witaminy D.

Metody. Polski Zespół Wielodyscyplinarny, opierając się na analizie wyników przeglądu literatury, opracował tezy dotyczące zasad suplementacji witaminą D. Opracowane tezy przesłano do członków Komitetu Naukowego konferencji „Witamina D – minimum, maksimum, optimum", 19-20 październik 2012, Warszawa. W trakcie powyższej konferencji omówiono i przedyskutowano propozycje wytycznych suplementacji witaminą D populacji Europy Środkowej.

Wyniki. Międzynarodowy Zespół Ekspertów opracował rekomendacje dotyczące a) schematu suplementacji witaminą D i b) dawek witaminy D dla wszystkich grup wiekowych populacji Europy Środkowej. Określono kryteria diagnostyczne charakteryzujące stan zaopatrzenia organizmu w witaminę D: deficyt witaminy D ustalono jako stężenie 25(OH)D <20 ng/mL (<50 nmol/L), suboptymalne zaopatrzenie jako stężenie 25(OH)D wynoszące 20-30 ng/mL (50-75 nmol/L), a stężenie 30-50 ng/mL (75-125 nmol/L) uznano za docelowe dla zapewnienia efektu plejotropowego witaminy D.

Wnioski. Poprawa obecnego stanu zaopatrzenia witaminy D w grupach dzieci, młodzieży, osób aktywnych zawodowo i seniorów powinna zostać włączona do priorytetów polityki zdrowotnej społeczeństw Europy Środkowej.

L32

RECOMMENDATIONS ON VITAMIN D SUPPLEMENTATION IN CENTRAL EUROPE

Płudowski P.[1], Karczmarewicz E.[1], Bayer M.[2], Carter G.[3], Chlebna-Sokół D.[4], Czech-Kowalska J.[5], Dębski R.[6], Decki T.[7], Dobrzańska A.[5], Franek E.[8], Głuszko P.[9,10], Grant W.B.[11], Holick M.F.[12], Yankovskaya L.[13], Konstantynowicz J.[14], Książyk J.B.[15], Księżopolska-Orłowska K.[16], Lewiński A.[17], Litwin M.[18], Lohner S.[6], Lorenc R.S.[1], Łukaszkiewicz J.[19], Marcinowska-Suchowierska E.[20], Milewicz A.[21], Misiorowski W.[22], Nowicki M.[23], Povoroznyuk V.[24], Rozentryt P.[25], Ruderka E.[26], Shoenfeld Y.[27], Socha P.[28], Solnica B.[29], Szalecki M.[30,31], Tałałaj M.[20], Varbiro S.[32], Żmijewski M.A.[33]

[1]Department of Biochemistry, Radioimmunology and Experimental Medicine, The Children's Memorial Health Institute, Warsaw, Poland

[2]Department of Pediatrics, Charles University Prague, Faculty of Medicine in Hradec Kralove, University Hospital Hradec Kralove, Czech Republic.

[3]Imperial College Healthcare NHS Trust Charing Cross Hospital, London, United Kingdom.

[4]Department of Propaedeutics of Paediatrics, Medical University of Lodz, Lodz, Poland.

[5]Department of Neonatology and Neonatal Intensive Care, The Children's Memorial Health Institute, Warsaw, Poland.

[6]II Department of Gynaecology and Obstetrics, Medical Center for Postgraduate Education, Warsaw, Poland.

[7]Department of Paediatrics, University of Pecs, Pecs, Hungary.

[8]Department of Internal Diseases, Endocrinology and Diabetology, Central Clinical Hospital MSWiA, Department of Human Epigenetics, Medical Research Center, Polish Academy of Sciences, Warsaw, Poland.

[9]Department of Rheumatology, Institute of Rheumatology, Warsaw, Poland.

[10]Andrzej Frycz Modrzewski KrakowUniversity, Krakow, Poland

[11]Sunlight, Nutrition and Health Research Center, San Francisco, CA, USA.

[12]Department of Medicine, Section of Endocrinology, Nutrition, and Diabetes Vitamin D, Skin and Bone Research Laboratory, Boston University Medical Center, Boston, MA, USA.

[13]Polyclinic Therapy Department, Grodno State Medical University, Grodno, Belarus.

[14]Department of Pediatrics and Developmental Disorders, Medical University of Bialystok, Bialystok, Poland.

[15]Department of Pediatrics, The Children’s Memorial Health Institute, Warsaw, Poland.

[16]Department of Rheumatologic Rehabilitation, Institute of Rheumatology, Warsaw, Poland.

[17]Department of Endocrinology and Metabolic Diseases, Polish Mother’s Memorial Hospital – Research Institute, Medical University of Lodz, Lodz, Poland.

[18]Department of Nephrology, Kidney Transplantation and Arterial Hypertension, The Children’s Memorial Health Institute, Warsaw, Poland.

[19]Department of Biochemistry and Clinical Chemistry, Medical University of Warsaw, Warsaw, Poland.

[20]Department of Family Medicine, Internal and Metabolic Bone Diseases. Medical Centre for Postgraduate Education, Warsaw, Poland.

[21]Department of Endocrinology, Diabetology and Isotope Therapy, Wroclaw Medical University, Wroclaw, Poland.

[22]Endocrinology Department, Medical Center for Postgraduate Education, Warsaw, Poland.

[23]Department of Nephrology, Hypertension, and Kidney Transplantation, Medical University of Lodz, Lodz, Poland.

[24]D.F. Chebotarev Institute of Gerontology of National Academy of Medical Sciences of Ukraine, Kiev, Ukraine.

[25]Third Department of Cardiology, Silesian Center for Heart Disease Silesian Medical University, Zabrze, Poland.

[26]Belarusian Medical Academy of Post-graduate Education, Minsk, Republic of Belarus.

[27]Zabludowicz Center for Autoimmune Diseases, Sheba Medical Center, Tel Hashomer Affiliated with Tel Aviv University, Faculty of Medicine, Israel.

[28]Department of Gastroenterology, Hepatology and Eating Disorders, The Children’s Memorial Health Institute, Warsaw, Poland.

[29]Department of Diagnostics, Jagiellonian University Medical College, Krakow, Poland.

[30]Department of Endocrinology and Diabetology, The Children's Memorial Health Institute, Warsaw, Poland.

[31]Faculty of Health Science, UJK, Kielce, Poland.

[32]Semmelweis University, Faculty of Medicine, 2nd Department of Obstetrics and Gynecology, Budapest, Hungary.

[33]Department of Histology, Medical University of Gdansk, Gdansk, Poland.

Background. Adequate vitamin D intake and its concentration in serum are important for bone health and calcium-phosphate metabolism as well as for optimal function of many organs and tissues. Documented trends in lifestyle, nutritional habits and physical activity appear to be associated with moderate or severe vitamin D deficits resulting in health problems. Most epidemiological studies suggest that vitamin D deficiency is prevalent among Central European populations. 1α,25-dihydroxyvitamin D [1α,25(OH)$_2$D], an active form of vitamin D regulates 3-5% of genome. Its synthesis is permanently limited by substrate shortage 25(OH)D. Therefore, proper serum 25(OH)D concentration is the primary target, and achievement and maintenance of proper vitamin D status is crucial for vitamin D effectiveness and health benefits.

Methods. After reviewing the epidemiological evidence and relevant literature, Polish multidisciplinary group formulated theses on recommendations for vitamin D screening and supplementation in the general population. These theses were subsequently sent to Scientific Committee members of the "Vitamin D – minimum, maximum, optimum" conference for evaluation based on a 10-point scale. With numerous international attendees, the meeting "Vitamin D – minimum, maximum, optimum" was held on October 19-20 2012 in Warsaw (Poland). Most recent scientific evidence of both skeletal and non-skeletal effects of vitamin D as well as results of

panelists’ voting were reviewed and discussed during eight plenary sessions and two workshops.

Results. The international Panel of Experts established recommendations on a) vitamin D supplementation scheme and b) vitamin D doses for general population of Central Europe. The key opinion leaders established ranges of serum 25-hydroxyvitamin D concentration indicating vitamin D deficiency [<20 ng/mL (<50 nmol/L)], suboptimal status [20-30 ng/mL (50-75 nmol/L)] and target concentration for optimal vitamin D effects [30- 50 ng/mL (75-125 nmol/L)].

Conclusions. General practical guidelines regarding supplementation and updated recommendations for prophylactic vitamin D intakes in Central European neonates, infants, children and adolescents as well as in adults (including recommendations for pregnant and breastfeeding women and the elderly) were developed. Improving the vitamin D status of children, adolescents, adults and seniors must be included in the priorities of physicians, healthcare professionals and healthcare regulating bodies.