PMOS and Cardiovascular and Metabolic Effects

Health Perils of PMOS

Given the prevalence of Polyendocrine Metabolic Ovarian Syndrome (PMOS) in the population, identification of whether PMOS increases the possibility of Cardiovascular Disease (CVD) has important public health implications. It is uncertain if PMOS is an independent risk factor for the development of CV disease although multiple lines of evidence suggest an increase in CV disease risk factors in young women with PMOS, including increased prevalence of metabolic syndrome, insulin resistance, type 2 diabetes mellitus, dyslipidemia, hypertension, and increased waist circumference.

Studies by Ollila et. al. (2023) demonstrated that women with PMOS start to manifest with major cardiovascular events (MACE) like heart attack, stroke, heart failure and cardiovascular mortality as early as 35 years of age!

What is the explanation for the cardiovascular risks and abnormal metabolism associated with PMOS?

The disease conditions mentioned above are related to having a disrupted metabolic picture in women with PMOS. This includes:

1. insulin resistance or difficulty of utilizing glucose for energy production,
2. hyperandrogenism,
3. adipose dysfunction,
4. microbiota dysbiosis, and
5. abnormal composition of metabolites.

An increased risk and early onset of cardiovascular disease in women with PMOS is strongly suspected but less well documented because of failure to screen early due to patient or physician neglect. Prospective studies have already documented an increased risk of cardiovascular events in women with PMOS. A recent finding from the Women's Ischemia Evaluation Study showed that women with PMOS had a larger number of CV events than women without PMOS. A number of cohort studies, including the Nurse's Health Study, have suggested an increased dose-response risk of cardiovascular disease or events in the presence of worsening or more symptoms of PMOS such as increasing oligomenorrhea in a menopausal population.

PMOS and vascular changes

Studies in premenopausal women with PMOS have detected an increased prevalence of subclinical atherosclerosis compared with controls (ranging from less than 10% in women with PMOS and increased carotid intimal medial thickness to 40% in those with PMOS and coronary artery calcification). Other findings include endothelial dysfunction, coronary artery calcification and arterial stiffness.

How can we avoid early development of cardiovascular diseases and abnormal metabolic issues?

Early screening of all patients with PMOS

Up to 70% of women with PMOS have evidence of dyslipidemia, predominantly low high-density lipoprotein cholesterol levels and increased triglyceride concentrations according to National Cholesterol Education Program guidelines. This pattern is known to be associated with insulin resistance and found commonly in patients with type 2 diabetes. Other studies have shown increased levels of low-density lipoprotein cholesterol although not typically in high ranges. It is likely the lipid abnormalities seen in patients with PMOS are influenced by the presence of obesity, genetics, environment and lifestyle factors. Thus women with PMOS should be screened for their risk of developing cardiovascular disease by determination of BMI, blood pressure, fasting serum lipid levels, HbA1c or sugar levels and liver function.

Periodic monitoring of risk factors

Women with PMOS should be rescreened periodically (example: annually) for cardiovascular disease risk factors because conversion from normal glucose levels to impaired glucose tolerance approaches 20% per year, but low-density lipoprotein (LDL) levels have tended to persist and plateau over time. If the woman with PMOS develops insulin resistance, this condition increases her risk of developing Diabetes Mellitus Type II and Cardiovascular disease.

Women with PMOS should also be screened for their risk, and eventually for their developing Metabolic Syndrome, since this condition contributes to both Diabetes and Heart Disease.

The metabolic syndrome in women most commonly is diagnosed by the updated Adult Treatment Panel III criteria by the presence of 3 out of 5 of the following:

- an elevated blood pressure level (greater than or equal to 130/85),
- increased waist circumference (greater than or equal to 35 inches),
- elevated fasting glucose levels (greater than or equal to 100 mg/dL),
- reduced high-density lipoprotein cholesterol level (less than or equal to 50 mg/dL), and
- elevated triglyceride levels (greater than or equal to 150 mg/dL).

Monitoring of response to targeted treatment

Women with PMOS should be targeted with interventions involving physical activity of at least moderate intensity and weight control to improve their cardiometabolic health and reduce morbidity and mortality. These modalities should first be considered before the use of prescription drugs.



REMINDER: There is no cure for PMOS. It is a lifelong disease. Treatment varies depending on the woman's presentation. The development of cardiovascular disease and abnormal metabolism can be addressed by early consultation and proper screening to determine appropriate treatment including advocacy for healthy lifestyle especially regular moderate intensity exercises.

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Kaugnayan ng PMOS at mga sakit sa puso at ugat "cardiovascular" at metabolismo

Mga panganib sa kalusugan na dulot ng PMOS

Kasalukuyang dumarami ang mga babaeng may Polyendocrine Metabolic Ovarian Syndrome (PMOS) sa ating lipunan. Ayon sa mga pagsasaliksik, ang mga may PMOS ay may higit na panganib na magkaroon ng sakit sa puso at ugat bukod pa sa "metabolic syndrome", "insulin resistance", diyabetes, mataas na kolesterol, altapresyon at paglapad ng baywang. Ito ay maaaring mauwi sa atake sa puso at sa utak ("stroke"). Ito ay mga karamdaman na madalas na dahilan ng pagpapa-ospital o kamatayan kaya may malaki itong epekto sa kalusugan ng publiko.

Ayon sa pagsasaliksik nina Ollila atbp. (2023), ang pagkakaroon ng atake sa puso, "stroke" (atake sa utak), panghihina ng puso ("heart failure"), at kamatayan dulot ng sakit sa puso at ugat ay nagsisimulang makita sa edad na 35 na taong gulang sa mga babaeng may PMOS!

Paano maipapaliwanag ang mga sakit na dulot ng PMOS?

Ang mga sakit na nabanggit ay may kaugnayan sa abnormal na metabolismo sa mga babaeng may PMOS tulad ng hindi normal na paggamit ng asukal sa katawan ("insulin resistance"), mataas na "androgen hormone", hindi normal na paggamit ng taba sa katawan ("adipose dysfunction" ay isang dahilan kaya mahirap pumayat). Pinaniniwalaan din na hindi pangkaraniwan ang maliliit na sangkap ("metabolites") at mikrobyo sa kanyang katawan kung kaya mahalaga ang pagpili ng wastong pagkain at pandagdag na sustansiya (halimbawa: Vit D3, inositol at probiotics) Bagama't pinaniniwalaang maagang nagsisimula ang sakit sa puso at ugat sa mga babaeng may PMOS, karaniwang hindi ito agad napapatunayan lalo na kung hindi ito binibigyan ng pansin ng kapwa doktor o pasyente. Samantala, ayon sa "Women's Ischemia Evaluation Study", ang mga babaeng may PMOS ay naitalang mas madalas tamaan ng sakit sa puso at ugat
kumpara sa mga walang PMOS. Sa ibang pagsasaliksik na kinabibilangan ng "menopause", kasama ang "Nurse's Health Study", inaasahang lumalaki ang pagkakataong magkaroon ng sakit sa puso at ugat ang mga babaeng may PMOS na may maraming sintomas o higit na madalang datnan ng regla.

PMOS at ang iyong ugat

Sa mga babaeng malapit nang tigilan ng regla ("premenopause"), nakita rin na maagang nagsisimula ang pagkakaroon ng "plaque" o pagbabara ng ugat sa mga may PMOS kumpara sa wala. Naitala ang halos 10-40% na pagkasira ng "carotids" (ugat na nagdadala ng malinis na dugo mula sa puso papuntang ulo) at "coronaries" (ugat na nagdadala ng malinis na dugo sa
puso) sa mga apektado ng PMOS. Ang iba naman ay nagkakaroon ng maagang pagkasira ng kinis sa loob na maliliit na ugat ("endothelial dysfunction"), maagang pagdami ng "calcium deposits" sa mga ugat ng puso o kaya naman ay maagang nagiging matigas ang mga ugat ("arterial stiffness").

Paano maagapan ang pagkakaroon ng sakit sa puso at ugat pati problema sa metabolismo?

Maagang pagsusuri ng lahat ng babaeng may PMOS

Halos 70% ng mga babaeng may PMOS ay nakitang may mababang HDL (good cholesterol), at mataas na "triglycerides" (bad cholesterol) ayon sa "National Cholesterol Education Program". Ang ganitong kumbinasyon ay karaniwang may kaakibat na "insulin resistance" at pagkakaroon ng "type 2 diabetes" (diyabetes na hindi nangangailangan ng insulin). Sa ibang pag-aaral, mataas naman ang LDL ("bad cholesterol") nila. Pinaniniwalaang ang ganitong mga resulta ay may kaugnayan sa pagkakaroon ng labis na timbang ("obesity"), lahi ("genetics"), kapaligiran ("environment") o paraan ng pamumuhay ("lifestyle factors"). Kaya, upang maagapan ang sakit, mahalagang ipasuri ang mga babaeng may PMOS kaugnay sa pagkakaroon ng sakit sa puso at ugat sa pamamagitan ng regular na pagkuha ng kanilang presyon, "body mass index (BMI)", SGPT o eksaminasyon ng atay, "lipid profile" o kolesterol at asukal (matapos ang kaukulang oras na hindi pagkain o inom). Kung ang alin man sa mga batayang ito ay abnormal, dapat itong itama sa pamamagitan ng pagsulong ng malusog na pamumuhay. Kung halimbawang hindi kakayanin ng pasyenteng itama ang kanyang timbang o kolesterol sa pamamagitan ng masustansyang pagkain at pag-eehersisyo lamang, mainam na bigyan siya ng angkop na gamot para mapigilan ang pagkasira ng kanyang puso o mga ugat.

Regular na pagbabantay sa mga sanhi ng panganib ng sakit

Mahalaga na magbigay ng regular na pagsusuri ukol sa pagkakaroon ng sakit sa puso at ugat (halimbawa- kada taon). Naitala na halos 20% ng mga babaeng normal ang asukal sa simula ay nagiging abnormal sa loob lamang ng isang taon. Karamihan naman sa abnormal ang LDL o "bad cholesterol" ay nananatiling mataas. Kung ang babaeng may PMOS ay magkakaroon din ng "insulin resistance", madadagdagan ang posibilidad na magkaroon din sya ng "type 2 diabetes" at sakit sa puso at ugat.

Ang "metabolic syndrome" ay isang sakit na kinabibilangan ng 3 sa 5 kondisyon:

- Malapad na baywang ("abdominal obesity")- 40 o higat pang pulgada sa lalaki, 35 o higat pang pulgada sa babae
- Mataas na presyon- BP 130/85 o higit pa
- Mataas na asukal- FBS ay 100mg/dl o hgit pa
- Mataas na triglycerides- 150 mg/dl o higit pa
- Mababa ang HDL o good cholesterol- 40 mg/dl o mas mababa pa sa lalaki; 50 mg/dl naman sa babae o mas mababa pa

Ito ay puwedeng humantong sa diyabetes o sakit sa puso. Mahalagang isa-isahin ang mga kundisyong nabanggit sa lahat ng babaeng may PMOS dahil isa ito sa mga karamdamang mas madali niyang makuha na maaari ding mauwi sa sakit sa puso at ugat.

Pagtutok sa epekto ng gamutan sa kaugnay na sakit

Mahalagang bantayan ang mga babaeng may PMOS para maiwasan ang pagkakasakit sa puso o ugat at maagang kamatayan. Makakatulong ang pagsulong ng masustansiyang pagkain, regular na pag-eehersisyo o paggalaw para labanan ang "insulin resistance" at mapabuti ang timbang bago pa man mangailangan ng mga gamot.



TANDAAN: Walang gamot para mawala ang PMOS. Ito ay panghabang buhay na sakit. Ang gamutan ay naaayon sa mga sintomas. Ang mga kumplikasyon sa puso at ugat at abnormal na metabolismo ng mga babaeng may PMOS ay maaaring mabigyang solusyon sa pamamagitan ng regular na pagpapasuri sa espesyalista, gamutan at pagsulong ng malusog na pamumuhay lalo na ang regular na pag-eehersisyo o paggalaw.

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