PP13.4. GOJAZNOST U DETINJSTVU: RANI METABOLIČKI MEHANIZMI I KARDIOMETABOLIČKE POSLEDICE

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Gojaznost u detinjstvu predstavlja jedan od vodećih globalnih zdravstvenih izazova usled rastuće prevalencije i snažne povezanosti sa ranim kardiometaboličkim poremećajima. Pored neposrednih zdravstvenih posledica, gojaznost u detinjstvu može pokrenuti niz kardiometaboličkih komplikacija koje često perzistiraju i u odraslom dobu. Sve veći broj dokaza ukazuje na to da osnove metaboličke disfunkcije povezane sa gojaznošću mogu nastati još tokom prenatalnog i perinatalnog perioda, kao posledica epigenetskog programiranja uslovljenog metaboličkim statusom majke. U tom smislu, gojaznost majke pre i tokom trudnoće, gestacijski dijabetes, gestacijska hipertenzija i dislipidemija u trudnoći mogu dovesti do dugoročnih promena fetalnog metabolizma, osetljivosti na insulin i lipidne homeostaze, čime se povećava rizik da dete kasnije u životu razvije gojaznost i kardiometaboličke bolesti. Gojaznost u dečjem uzrastu usko je povezana sa hroničnom inflamacijom niskog stepena, oksidativnim stresom, insulinskom rezistencijom i akumulacijom ektopičnog masnog tkiva. Prekomerno nakupljanje visceralnog i hepatičnog masnog tkiva doprinosi razvoju dislipidemije, endotelne disfunkcije i masne bolesti jetre udružene sa metaboličkom disfunkcijom, koji se sve češće otkrivaju i u pedijatrijskoj populaciji. Udruženo, ovi mehanizmi formiraju začarani krug koji podstiče razvoj dijabetes melitusa tip 2 i kardiovaskularnih bolesti u kasnijem životnom dobu. Bolje razumevanje ranog metaboličkog programiranja i pravovremeno prepoznavanje faktora rizika povezanih sa gojaznošću putem sveobuhvatne procene biomarkera, uz preventivne strategije usmerene na očuvanje metaboličkog zdravlja majke pre i tokom trudnoće i promociju zdravih životnih navika tokom detinjstva, može doprineti smanjenju rizika od gojaznosti i unapređenju dugoročnih kardiometaboličkih ishoda budućih generacija.

PP13.4. CHILDHOOD OBESITY: EARLY METABOLIC MECHANISMS AND CARDIOMETABOLIC CONSEQUENCES

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Childhood obesity has emerged as one of the leading global health challenges, due to its rapidly increasing prevalence and strong association with early cardiometabolic disturbances. Beyond immediate health effects, obesity in early life may initiate a cascade of cardiometabolic complications that often persist into adulthood. Recent evidence suggests that the origins of obesity-related metabolic dysfunction may begin already during prenatal and perinatal life through epigenetic programming, induced by maternal metabolic status. In this regard, maternal obesity, gestational diabetes, gestational hypertension and dyslipidemia in pregnancy may induce long-lasting alterations in fetal metabolism, insulin sensitivity and lipid homeostasis, thereby increasing the susceptibility of offspring to obesity and cardiometabolic diseases later in life. The development of childhood obesity is strongly associated with chronic low-grade inflammation, oxidative stress, insulin resistance and ectopic fat accumulation. Excessive deposition of visceral and hepatic fat contributes to dyslipidemia, endothelial dysfunction and metabolic dysfunction-associated steatotic liver disease, which are increasingly recognized even in pediatric populations. Together, these mechanisms create a vicious cycle that promotes the development of type 2 diabetes mellitus and cardiovascular disease later in life. A better understanding of early metabolic programming and timely identification of obesity-associated risk factors through comprehensive biomarker assessment, together with preventive strategies focused on maternal metabolic health before and during pregnancy, as well as the promotion of healthy lifestyle habits during childhood, may help reduce obesity risk and improve long-term cardiometabolic outcomes in future generations.