QO`RG`OSHINDAN SURUNKALI ZAHARLANISHDA MOYAKLARDAGI MORFOLOGIK O`ZGARISHLAR

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ANNOTATSIYA

Og`ir metallar bilan zaharlanish prostata, epididimis va urug' pufakchalari kabi ikkilamchi jinsiy bezlar bilan bir qatorda moyaklar funktsiyalarini buzadi, natijada ularning biokimyoviy tarkibi o'zgaradi va steroidogenez va gametogenezga ta'sir qiladi.

Kalit so'zlar: Qo'rg'oshin asetati, solan anomaliyasi, oksidlovchi stress, jamoat salomatligi.

KIRISH

Qo'rg'oshin turli kasalliklarda ishtirok etgan (1). Qo'rg'oshinga ta'sir qilish qo'rg'oshinli benzin, qo'rg'oshin eritish va ko'mirni yoqish, qo'rg'oshin asosidagi bo'yoqlar, qo'rg'oshin o'z ichiga olgan quvurlar yoki suv ta'minoti tizimlarida qo'rg'oshin asosidagi lehim, batareyalarni qayta ishlash, panjaralar va podshipniklar va boshqalar orqali bo'lishi mumkin (2).

Qo'rg'oshinning boshqa manbalariga quyidagilar kiradi: sopol sirlar, o'yinchoqlar, o'q-dorilar va zargarlik buyumlari, shuningdek, ba'zi kosmetika va an'anaviy tibbiyot. Kasbiy ta'sirda qo'rg'oshin urug'lik parametrlarini, shu jumladan zichlik, umumiy spermatozoidlar soni va hayotiyligini pasaytiradi, bu patologik spermatozoidlar sonining ko'payishi, libidoning pasayishi, spermatogenezning o'zgarishi, xromosoma shikastlanishi, bepushtlik va sarum testosteronining o'zgarishi (3-5).

Erkaklar bepushtligi er-xotinlarning 10-15 foizida bepushtlik holatlarining taxminan 50 foizini tashkil qiladi (6). Erkaklarning bepushtligi bilan bog'liq asosiy omillardan biri ishlab chiqarilgan sperma miqdori va sifatidir (7).

Spermatogenezning buzilishi tizimli kasalliklar, endokrin kasalliklar, to'yib ovqatlanmaslik, irsiy omillar va atrof-muhitning xavf-xatarlari kabi bir qancha sabablarning natijasidir (8). Og'ir metallar epidemiologik va hayvonlarni o'rganishda ko'rsatilgandek, erkaklarning ko'payishini buzishi mumkin (9).

Qo'rg'oshin bilan zaharlanish prostata, epididimis va urug' pufakchalari kabi ikkilamchi jinsiy bezlar bilan bir qatorda moyaklar funktsiyalarini buzadi, natijada ularning biokimyoviy tarkibi o'zgaradi va steroidogenez va gametogenezga ta'sir qiladi (10). Moyakda qo'rg'oshinning to'planishi anti-spermatogen ta'sirga ega ekanligi ma'lum (11). Anjum va boshqalarga ko'ra. (12), qo'rg'oshin bilan davolash qilingan kalamushlarning moyaklarida sezilarli degeneratsiya va atrofiyalangan seminifer kanalchalar aniqlangan, bunda jinsiy hujayralarning etuk spermatozoidlarga muntazam ravishda differentsiatsiyalangan bosqichlari yo'q.

Xelatlovchi preparat qo'rg'oshin molekulalarini bog'lab, ularning chiqarilishiga yordam beradi va keyinchalik qo'rg'oshinning tanadagi yukini kamaytiradi (16). Biroq, chelasion dorilar ba'zi yon ta'sirga ega. Suksimer ko'ngil aynishi, qusish, diareya va teri toshmasi sabab bo'ladi; Penitsilamin (qorin og'rig'i, terining shikastlanishi, alopesiya, stomatit, glossit, luekopeniya, trombotsitopeniya, enurez); (ko'ngil aynishi, qusish, terlash, yuqori isitma, gipertoniya va taxikardiya) (17-18, 14); jigar transaminaza faolligining vaqtinchalik o'sishiga olib keladi, ammo bu preparatni to'xtatish bilan yo'qoladi(19); EDTA (buyrak toksikligi, gipokalsemiya tufayli yurak muammolari). Hisobotda EDTA bilan davolanish tufayli o'lim holatlari mavjud. Ushbu chelatatorlarning salbiy ta'siridan tashqari, ushbu agentlarning taqiqlangan narxi va tanqisligi rivojlanayotgan mamlakatlardagi resurslar kambag'al mamlakatlarida jiddiy boshqaruv muammolarini keltirib chiqaradi.

Reaktiv kislorod turlari (RKT) odatda zararli erkin radikallar organizmning antioksidant himoya mexanizmidan oshib ketganda hosil bo'ladi, bu hodisa oksidlovchi stress deb ataladi. Oksidlanish shikastlanishi lipidlar va oqsillarning peroksidlanishi va nuklein kislotalarning shikastlanishi orqali bevosita hujayra shikastlanishiga olib keladi (24, 25). Organizmlar glutation, glutation peroksidaza, superoksid dismutaza va katalaza orqali to'planishi bilan kurashadi (26-28). Ishlab chiqarish va antioksidant salohiyat o'rtasidagi muvozanat kasalliklarning patofiziologiyasida hal qiluvchi rol o'ynaydi (29).

Nigeriyada bepushtlikning asosiy sababi infektsiya ekanligiga ishoniladi. Nigeriyada infektsiyani davolashdan keyin bepushtlik holatlari qayd etilgan (30). Nigeriyada bepushtlikning boshqa sabablariga qaraganda qaytarilmas oligo- yoki azospermiya ko'rsatkichlari yuqori (30). Arzon resurslar bilan bepushtlikni boshqarish juda qiyin va katta ijtimoiy ahamiyatga ega bo'lishi mumkin. Atrof-muhitni ifloslantiruvchi moddalarga, jumladan qo'rg'oshin kabi og'ir metallarga ta'sir qilish Nigeriyada 12 milliondan ortiq bepushtlik uchun javobgar bo'lishi mumkinligidan qo'rqishadi (30). Qo'rg'oshin bilan zaharlanishning klassik antidotlari

bo'lgan xelatatorlarning yuqori narxi, tanqisligi va nojo'ya ta'sirining keng doirasini hisobga olgan holda, rivojlanayotgan mamlakatlarda qo'rg'oshinning zararli ta'sirini engillashtiradigan yoki yo'q qiladigan keng tarqalgan "tabiiy antidotlar" ni doimiy ravishda izlash tadqiqot markazida bo'ldi. bizning laboratoriyamiz.

Uyo universiteti hayvonlar uyidan olingan og‘irligi 145-170 g (11-15 haftalik) bo‘lgan yigirma to‘rt erkak albinos Wistar kalamushlari ikki hafta davomida iqlimga moslashtirilib, harorat (23 ± 2 °C) va namlikning nazorat ostida bo‘lgan sharoitlarida saqlanadi. Tajriba uchun (50 ± 5%) va 12 soatlik yorug'lik-qorong'i tsikl ishlatilgan (31). Hayvonlar sterillangan polipropilen qafaslarga joylashtirildi, ular to'shak sifatida steril shol po'stlog'i solingan. Qafaslarning choyshablari har hafta o'zgartirilib, qafaslar ham tozalandi. Ular standart kalamush granulalari dietasiga va ad libitum suvidan bepul foydalanishlari mumkin edi (31). Jarayonlar hayvonlardan foydalanish bo'yicha ko'rsatmalarga muvofiq amalga oshirildi va Nigeriya, Uyo universitetining Hayvonlarning etik qo'mitasi tomonidan tasdiqlangan (Axloqiy tasdiqlash №: UNIUYO/PHARM/2015/0153) (31).

Moyak oksidlovchi stressi erkaklar bepushtligining asosiy xususiyatidir (41). Spermiogenez jarayonida qo'rg'oshin inson protaminlari bilan bog'lanib, sperma xromatin barqarorligini o'zgartiradi va normal xromatin kondensatsiyasiga ta'sir qiladi (41, 42). Toksik sabab bo'lgan oksidlovchi stress antioksidant va reaktiv kislorod turlari muvozanatini buzish orqali sperma sifatiga katta zarar etkazadi va shu bilan spermatogenez va erkaklarning bepushtligi anormalliklariga olib keladi (43, 44). Ko'pgina ikki valentli metallar singari qo'rg'oshin ham to'qimalarda ion (skelet minerallarida) yoki koordinatsion aloqalar bilan bog'lanadi va odatda albumin, fermentlar, mayda peptidlar, sistein, metionin va selenometionin bilan bog'lanadi (45). Qo'rg'oshin glutation bilan bog'lanadi va boshqa ikki valentli metallar kabi hujayradan qon zardobida yoki limfada aylanishi mumkin. Qo'rg'oshinning keyingi cho'kishi to'qimalar yoki organlarning shikastlanishiga olib keladi (46). ROS steroidogen yo'ldagi muhim voqealarga zararli ta'sir ko'rsatadi, deb ishoniladi (47). ning yuqori darajalari lipid peroksidatsiyasini va membranani shikastlanishiga olib keladi, bu esa sperma harakatining yo'qolishiga (48), glikolitik fermentlarning inaktivatsiyasiga va sperma hujayralarini (50) ishlamay qoladigan akrosomal membranalarning shikastlanishiga (49) olib keladi

Xulosa

Birgalikda, Solanum anomalum ekstraktining MDA, antioksidant biomarkerlarga dozaga bog'liq teskari ta'siri va qo'rg'oshin asetatini yuborishdan keyin kalamush moyaklaridagi gistopatologik o'zgarishlar inson uchun

ekstrapolyatsiya qilinishi mumkin bo'lgan foydali ta'sirni ko'rsatadi. Shunday qilib, ushbu tadqiqotda Solanum anomalumining yaxshilovchi ta'siri uning boy antioksidant tamoyillari va ROSni tozalash ta'siri bilan bog'liq bo'lishi mumkin deb taxmin qilish mumkin.

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