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O‘ZBEKISTON RESPUBLIKASI SOG‘LIQNI SAQLASh VAZIRLIGI
RESPUBLIKA IXTISOSLAShTIRILGAN DERMATOVENEROLOGIYA VA KOSMETOLOGIYA
ILMIY-AMALIY TIBBIYOT MARKAZI

«GIPERPIGMENTASIYA» NOZOLOGIYASI BO‘YICHA TIBBIY KOSMETOLOGIYADA TIBBIY HIZMAT KO‘RSATISH MILLIY KLINIK PROTOKOLLARI

TOSHKENT 2025

«TASDIQLAYMAN»
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«____» _____ 2025 yil

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«GIPERPIGMENTASIYA» NOZOLOGIYASI BO‘YICHA DIAGNOSTIKA VA DAVOLASH MILLIY KLINIK PROTOKOLLARI

Toshkent 2025

1. KIRISh QISMI

10/11-XKT bo‘yicha kodlar:

L81.0	Yallig‘lanishdan keyingi giperpigmentasiya	ED60.2	Yallig‘lanishdan keyingi giperpigmentasiya
L81.1	Xloazma	ED60.1	Xloazma
L81.2	Sepkillar	ED61.0	Sepkillar
L81.8	Boshqa aniqlangan pigmentasiyalar		
	https://medihost.ru/glossary/mkb/11328		https://icd11.ru/narusheniya-epidermisa-mkb11/

Protokol ishlab chiqilishi va qayta ko‘rilishi sanasi: 2025-yil, protokolni qayta ko‘rib chiqish sanasi 2028-yil yoki yangi asosiy dalillar paydo bo‘lganda. Barcha taqdim etilgan tavsiyalarga kiritilgan o‘zgartirishlar tegishli hujjatlarda e’lon qilinadi.

Ushbu klinik protokol va standartni ishlab chiqish uchun mas'ul muassasa:

Respublika ixtisoslashtirilgan dermatovenerologiya va kosmetologiya ilmiy-amaliy tibbiyot markazi

Milliy klinik bayonnoma va standartni yaratishda o‘z xissalarini qo‘shdilar:

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2.	Muminova S.R.	Dermatovenerolog, Dermatokosmetolog shifokor, t.f.n.	O‘zR SSV “RIDVvaKIATM”

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Mazkur klinik protokol va standart O‘zbekiston Respublikasi Sog‘liqni saqlash vazir o‘rinbosari Basitxanova E.I, Tibbiy sug‘urta boshqarmasi boshlig‘i Sh. Almardanov, klinik protokollar va

standartlarni ishlab chiqish va joriy etish bo‘limi boshlig‘i Sh.R. Nurimova boshchiligida, klinik protokollar va standartlarni ishlab chiqish va joriy etish bo‘limi bosh mutaxassisi G. Djumaeva va yetakchi mutaxassisi N.Raximovalar tomonidan mutaxassislarining tashkiliy va uslubiy ko‘magida ishlab chiqilgan.

Muhokama protokolidan olingan sana va raqam: O‘zR SSV “RIDVvaKIATM” Ilmiy Kengashining 26.06.2025dagi 6 sonli bayonnomasidan ko‘chirma

Protokol foydalanuvchilari:

1. Dermatovenerolog shifokorlari;
2. Tibbiy kosmetologlar;
3. Umumiy amaliyot shifokorlari;
4. Sog‘liqni saqlash tashkilotchilari;
5. Klinik farmakologlar;
6. Tibbiyot oliy o‘quv yurtlari talabalari, klinik ordinatorlar, magistrantlar, o‘qituvchilari;
7. Ushbu patologiya bilan og‘rigan bemorlar, ularning oila a'zolari va g‘amxo‘rlik qiluvchilar.

Ushbu protokol giperpigmentasiyaning zamonaviy diagnostika va davolash usullarini sog‘liqni saqlash amaliyotiga ommaviy joriy etish uchun asos bo‘lib xizmat qiladi.

Ushbu nozologiya bo‘yicha bemorlar kategoriyasi: ushbu diagnozi mavjud bemorlar.

Diagnostika usullari uchun dalillar darajasini baholash shkalasi (diagnostik aralashuvlar)

DID	Sharhi
1	Referens usulidan foydalangan tadqiqotlarning tizimli ko‘rib chiqilishi yoki meta-tahlil qo‘llanilishi bilan randomizirlangan klinik tadqiqotlarning tizimli ko‘rib chiqilishi.
2	Referens usulidan foydalangan alohida tadqiqotlar yoki alohida randomizirlangan klinik tadqiqotlar va meta-tahlil qo‘llanilgan randomizirlangan klinik tadqiqotlardan tashqari, har qanday dizayndagi tadqiqotlarning tizimli ko‘rib chiqilishi.
3	Referens usuli bo‘lmagan nazoratsiz tadqiqotlar yoki tadqiq etilayotgan usuldan mustaqil bo‘lmagan referens usulidan foydalangan tadqiqotlar va randomizirlanmagan qiyosiy tadqiqotlar, shu jumladan kogort tadqiqotlari.
4	Qiyosiy bo‘lmagan tadqiqotlar, klinik holatning tavsifi.
5	Faqat ta'sir mexanizmlari asoslantirilgan yoki mutaxassislarning fikri mavjud.

Profilaktik, davolash, reabilitasion aralashuvlar uchun dalillar ishonarliligi darajalarini baholash shkalasi

DID	Sharhi
1	Meta-tahlil qo‘llangan randomizirlangan klinik tadqiqotlarning tizimli ko‘rib chiqilishi.
2	Aloxida randomizirlangan klinik tadqiqotlar va meta-tahlil qo‘llanilgan randomizirlangan klinik tadqiqotlardan tashqari, har qanday dizaynga ega tadqiqotlarning tizimli ko‘rib chiqilishi.
3	Randomizirlanmagan qiyosiy tadqiqotlar, shu jumladan kogort tadqiqotlari.
4	Qiyosiy bo‘lmagan tadqiqotlar, klinik holat yoki holatlar seriyasining tavsifi, "holat-nazorat" tadqiqotlari.
5	Faqat aralashuvning ta'sir mexanizmining asoslantirilishi (klinika oldi tadqiqotlar) yoki mutaxassislar fikri mavjud.

Profilaktik, diagnostik va davolash-reabilitasiya tadbirlariga oid tavsiyalar ishonchliligi darajasini baholash shkalasi

TID	Sharhi
A	Kuchli tavsiya (barcha ko‘rib chiqilayotgan samaradorlik mezonlari (natijalar) muhim, barcha tadqiqotlar yuqori yoki qoniqarli metodologik sifatga ega, ularning natijalar bo‘yicha xulosalari muvofiq).
B	Shartli tavsiya (barcha ko‘rib chiqilayotgan samaradorlik mezonlari (natijalar) muhim emas, barcha tadqiqotlar yuqori yoki qoniqarli metodologik sifatga ega emas yoki ularning natijalar bo‘yicha xulosalari muvofiq emas).
C	Kuchsiz tavsiya (zarur sifatdagi dalillar yo‘q; barcha ko‘rib chiqilayotgan samaradorlik mezonlari (natijalar) ahamiyatsiz, barcha tadqiqotlar past metodologik sifatga ega va ularning qiziqarli natijalar bo‘yicha xulosalari muvofiq emas).

Mundarija

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Qisqartmalar ro‘yxati:

MKB	Xalqaro kasalliklar tasnifi
IXLA	Immunoxemilyuminessent tahlil
IFlA	Immunoflyuoressent tahlil
IFA	Immunoferment tahlil
PZR	Polimeraz zanjir reaksiyasi
RIF	Reaksiya ImmunoFluoressens reaksiyasi
OTIR	Oqish Treponema Immobilizasiya Reaksiyasi
PGaR	Passiv Gemagglyutinasiya Reaksiyasi
EChT	Eritrositlar cho‘kish tezligi
IgG IgM	(Immunoglobulinum) Immunoglobulini G va M
OIV	Odam immun tanqisligi
XNM	Xalqaro normallashtirilgan munosabatlar
BJSST	Butunjahon sog‘liqni saqlash tashkiloti
OK	oral kontraseptivlar
NF-kb -	k-beta usun yadroomili
MASI	giperpigmentasiyalar maydoni va og‘irligi indeksi
MELASQOL	melazmali bemorlar hayot sifati shkalasi

Kirish.

Giperpigmentasiya — terining pigmentasiyasiga doir eng keng tarqalgan buzilishlardan biri bo‘lib, derma yoki epidermisning ma'lum sohalarida melaninning haddan tashqari to‘planishi bilan xarakterlanadi. Bu holat mustaqil estetik muammo sifatida namoyon bo‘lishi yoki turli dermatologik yoki endokrin kasalliklarning belgisi bo‘lishi mumkin. Giperpigmentasiyaning eng ko‘p uchraydigan shakllari quyidagilarni o‘z ichiga oladi: melazma, yallig‘lanishdan keyingi giperpigmentasiya va quyosh (lentigioz) dog‘lari.

Mazkur milliy klinik protokollarni ishlab chiqishdan maqsad — tibbiy kosmetologiya doirasida giperpigmentasiyaga chalingan bemorlarga ko‘rsatiladigan tibbiy yordamni standartlashtirishdir. Protokollar zamonaviy klinik tavsiyalar, xalqaro ilmiy ma'lumotlar va etakchi mutaxassislarning amaliyotdagi tajribasiga asoslangan holda, xavfsizlik, samaradorlik va har bir bemorga individual yondashuvni hisobga olgan holda ishlab chiqilgan.

Tavsifi

Melazma (yunoncha “melas” — qora) yoki xloazma (yunoncha “chloasma” — yashil) — orttirilgan pigmentasiya buzilishi bo‘lib, asosan yuz, bo‘yin, old va orqa dekolte sohasi, qo‘llarning yozuvchi yuzasi kabi ochiq joylarda bilateral va simmetrik joylashgan, och jigarrang yoki qahvarang dog‘lar ko‘rinishida namoyon bo‘ladi. Ular noto‘g‘ri shaklda bo‘lib, bir-biri bilan qo‘shilib ketishga moyil va provokasion omillar bartaraf etilganda o‘z-o‘zidan yo‘qolishi mumkin [1,3,4,5,7].

Garchi “xloazma” va “melazma” atamalari o‘zaro sinonim hisoblansa-da, amaliyotda “xloazma” atamasi

koʻproq homilador ayollar, jinsiy tizim patologiyasiga ega ayollar va peroral kontraseptiv vositalar qabul qilayotgan ayollarda uchraydigan giperpigmentasiyaning turi sifatida qoʻllaniladi [20,21]. Qator mualliflar tomonidan “xloazma”, “homiladorlik niqobi”, “jigar dogʻlari”, “bachadon xloazmasi”, “chloasma gravidarum”, “chloasma virgininum” kabi atamalar eskirgan va bemor holatini toʻliq ifoda eta olmaydigan, semantik jihatdan noo‘rin tushunchalar sifatida qaraladi [28]. Biroq, bu tushunchalar hanuzgacha dermatologiya adabiyotlarida uchrab turibdi.
Yallig‘lanishdan keyingi giperpigmentasiya (YaKG) — sezuvchanligi oshgan melanositlarning yallig‘lanishdan keyingi paydo bo‘ladigan orttirilgan ikkilamchi pigmentasiya buzilishi hisoblanadi [1,2,6,9].
Melaninga bog‘liq bo‘lmagan pigmentasiyalar — terida melaninga mansub bo‘lmagan rang beruvchi moddalarning to‘planishi natijasida yuzaga keladigan pigmentasiya jarayonidir. Melaninsiz pigmentasiya turlariga temir bilan bog‘liq pigmentasiya, oxronoz (alkaptonuriya) va argiriya kiradi.
Tatuirovka — bu teriga doimiy rasm tushirish jarayoni bo‘lib, u mahalliy shikastlantirish orqali pigmentni teri osti qatlamiga yuborish usulida amalga oshiriladi.

Etiologiya va patogenezi

Giperpigmentasiya rivojlanishining etiopatogenezi to‘liq o‘rganilmagan bo‘lib, hozirda bir nechta asosiy nazariyalar mavjud va ularning ko‘pchiligi o‘zaro bog‘liq nuqtalarga ega. Giperpigmentasiya — bu melanositlarning oshgan faoliyati natijasida yuzaga keladigan holat bo‘lib, bunga quyidagi etiologik omillar ta'sir qiladi:

● Irsiy moyillik — melanositlarning turli qo‘zg‘atuvchi (stimullovchi) ta'sirlarga nisbatan yuqori sezuvchanligi bilan bog‘liq holda;
● Ultrabinafsha nurlar ta'siridagi fotoshikastlanish;
● Ko‘rinadigan yorug‘lik ta'siridagi shikastlanish (ayniqsa, nonvoylar va stomatologlar kabi kasbiy kontaktlarda);
● Gormonal holatlar (qalqonsimon bez kasalliklari, peroral kontraseptivlarni qabul qilish, homiladorlik (ayniqsa ko‘p homilali), perimenopauza, tuxumdon o‘smalari, tuxumdonlarning disfunksion holatlari);
● Metabolik buzilishlar;
● Jigar va ovqat hazm qilish tizimi kasalliklari;
● Etarli ovqatlanmaslik (nutritiv etishmovchilik);
● Surunkali gonoreyali infeksiya;
● Fotosensibilizator xususiyatiga ega kosmetik yoki farmasevtik vositalarni qo‘llash (peroral kontraseptivlar, o‘rinbosar gormonal terapiya, fenitoin va boshqalar).
Aksariyat tadqiqotlar melanin sintezini oshirish mexanizmlarini aniqlashga qaratilgan, chunki aynan ushbu jarayon giperpigmentasiya rivojlanishining eng muhim patogenetik bosqichi hisoblanadi. Melanin melanosomalarda sintezlanadi, ular bir qator fermentlarni, xususan tirozinazani o‘z ichiga oladi [13]. Ko‘plab tadqiqotchilar shunga ishonadiki, shikastlangan teri sohalarida melanositlar va melanosomalar soni oshgan, tirozinaza faolligi va melanin ishlab chiqarilishi kuchaygan bo‘ladi. Biroq, 2011 yildagi tadqiqot ma'lumotlariga ko‘ra, pigment to‘plangan uchastkalardagi melanositlar soni sog‘lom teridagi miqdorga teng bo‘lib, pigmentasiyaning paydo bo‘lishi pigment ishlab chiqaruvchi hujayralar sonining ortishi bilan emas, balki melanogenezning kuchayishi bilan bog‘liq [11].

Shuningdek, ba'zi tadqiqotlar melanogenezning kuchayishi ma'lum genlarning susayishi yoki, aksincha, faollashuvi bilan bog‘liq bo‘lishi mumkinligini ko‘rsatgan. Jumladan, giperpigmentasiya o‘choqlarida H19 geni va Wnt yo‘li genlarida shikastlanish kuzatilgan [11,13,19]. Bundan tashqari, lipid almashinuviga javobgar genlarning susayishi, muguz qatlami yaxlitligining buzilishi va shikastlangan sohalarda terining to‘siq funksiyasi sekin tiklanishi ham qayd etilgan [11,17]. Bu shikastlanishlar yallig‘lanish va sitokinlar orqali melanositlarning faollashuviga hissa qo‘shishi ehtimoldan xoli emas.

Ayrim tadqiqotlarda giperpigmentasiya o‘choqlarida quyosh elastoziga xos yaqqol o‘zgarishlar qayd etilgan va ultrabinafsha nurlanishining kumulyativ ta'siri haqida taxminlar bildirilgan. Ultrabinafsha nurlanish yallig‘lanish sitokinlari — interleykin-1, endotelin-1, alfa-melanosit-stimullashtiruvchi gormon (alfa-MSG), adrenokortikotrop gormon (AKTG) kabilarning ishlab chiqarilishini rag‘batlantiradi. Bu moddalar melanositlarni faollashtirib, pigmentasiyaning paydo bo‘lishiga olib keladi [5,7,10,20,29].

Giperpigmentasiya rivojlanishining yana bir ehtimoliy mexanizmi — qon tomir endoteliyining o‘sish omili (VEGF) darajasining oshishi va shikastlangan terida vaskulyarizasiyaning kuchayishi (tomirlar soni va hajmining ortishi). Inson melanositlari odatda VEGF reseptorlarini o‘z yuzasida ekspressiya qilishi ma'lum, bu esa melanositlarning angiogen omillarga javob berish qobiliyati borligini ko‘rsatadi va giperpigmentasiya rivojida tomir komponentlarining ahamiyatini tushuntiradi. Shuningdek, qon tomir endoteliy hujayralari sitokinlar, plazminogen va boshqa melanogenezga ta'sir qiluvchi moddalarni ishlab chiqara oladi [5,7,9,10,18].

Biroq, shuni ham hisobga olish kerakki, ultrabinafsha nurlanishning o‘zi angiogenezni rag‘batlantiradi. Demak, xloazma o‘choqlarida kuzatiladigan vaskulyar o‘zgarishlar faqat surunkali quyosh shikastlanishi natijasi bo‘lishi mumkin, bu esa giperpigmentasiya bilan birga kechadi [9].

Ayrim manbalarda gormonal ta'sirning roli ta'kidlangan. Bu pigmentasiyaga uchragan joylarda estrogen va progesteron reseptorlarining kuchaytirilgan ekspressiyasi bilan bog‘liq [6,18,20,24]. Bundan tashqari, ushbu nazariya homiladorlik paytida estrogen, progesteron va melanosit-stimullashtiruvchi gormon darajalarining yuqoriligi bilan bilvosita tasdiqlanadi. Ushbu gormonlar melanogenezni DOFAxrom-tautomeraza va tirozinaza orqali rag‘batlantirish qobiliyatiga ega. Tirozinaza faoliyati gormonlar tomonidan to‘g‘ridan-to‘g‘ri yoki bilvosita — sAMF (siklik adenozinmonofosfat) miqdorining oshishi orqali faollashtirilishi mumkin [6,18,28].

Erkaklarda giperpigmentasiya rivojlanishining etiopatogenezida asosiy rol testosteron darajasining pastligi va prostata bezi saratonini davolash maqsadida dietilstilbestrolni qabul qilishga beriladi [10].

Giperpigmentasiya turidagi pigmentasiya rivojida keratinositlar, fibroblastlar va ular tomonidan ishlab chiqariladigan, melanositlar yuzasidagi reseptorlar bilan o‘zaro ta'sir qiluvchi omillar muhim o‘rin tutadi. Melazmali bemorlarda pigmentasiya o‘choqlarida keratinositlar va fibroblastlar chiqaradigan parakrin omillar konsentrasiyasi oshgan bo‘ladi. Masalan, fibroblastlar tomonidan neyregulin-1 oqsilining ortiqcha ishlab chiqarilishi melanogenezni kuchaytirishi mumkin. Shuningdek, keratinosit va fibroblastlarda Wnt yo‘li ingibitori bo‘lgan Wif-1 oqsili ishlab chiqarilishining susayishi tirozinaza faolligini va melanosomalarning tashilishi jarayonini Wnt yo‘li orqali rag‘batlantiradi [8,9,18,19].

Hozirgi kunda fotosensibilizator dorilarni qabul qilishga ham katta ahamiyat berilmoqda. Masalan, fenitoinni qabul qilish 10% bemorlarda giperpigmentasiya rivojlanishiga sabab bo‘ladi. Bu dori vositasi melanositlarga to‘g‘ridan-to‘g‘ri ta'sir qilib, epidermisning bazal qatlamida pigment to‘planishiga olib keladi. Preparat bekor qilinganidan bir necha oy o‘tib, pigmentasiya o‘z-o‘zidan regressga uchraydi [10].

Ilgariroq, peroral kontraseptivlarni qabul qilish pigmentasiya rivojlanishining asosiy patogenetik omillaridan biri hisoblangan. Biroq 2009 yildagi tadqiqot natijalariga ko‘ra, bunda oilaviy anamnez kattaroq ahamiyatga ega ekani aniqlangan: agar ayolda xloazmaga moyillik bo‘lsa, u holda peroral kontraseptivlar qabul qilinganidan keyin pigmentasiya rivojlanish ehtimoli bunday irsiy moyillikka ega bo‘lmagan ayollarga nisbatan 2,5 marta yuqori bo‘lgan [10,12].

Pigmentasiya buzilishining boshqa turlarida etiologiya va patogenez har bir klinik ko‘rinish uchun individual xarakterga ega.

Gipermelanozning turli shakllarini lokallashgan va generallashgan deb tasniflash mumkin. Lokallashgan gipermelanoz odatda teri o‘smalariga mos keladi va yurak nuqsonlarini o‘z ichiga oluvchi murakkab sindromlarning teridagi namoyon bo‘lish shakllarini, shuningdek, yallig‘lanuvchi va/yoki infeksion dermatozlarning pigmentlangan shakllarini shakllantirishi mumkin.

Diffuz (ya'ni tarqalgan) gipermelanoz ko‘pincha metabolik yoki endokrin kasalliklar kabi tizimli kasalliklarning belgisi sifatida namoyon bo‘ladi yoki dori vositalarini qabul qilish natijasida paydo bo‘lishi mumkin.

Insonlarda teri rangining normal diapazoni rangpar oqish teri rangidan tortib, och qahvarang, to‘q qahvarang va juda qora terigacha bo‘lgan xilma-xillikni o‘z ichiga oladi. Teri rangi — terining turli xromoforlarining aralashmasidan tashkil topgan: qizil (oksigemoglobin), ko‘k (dezoksigemoglobin), sariq-to‘q sariq (karotin, ekzogen pigmentlar) va jigarrang (melanin).

Shu bilan birga, teri rangida asosiy rolni melanin o‘ynaydi. Melanositlardagi melanosomalarda melaninning mavjud yoki mavjud emasligi, shuningdek keratinositlarda melaninning miqdori epidermal pigmentasiyaga javobgar; dermada esa melaninning makrofaglar yoki melanositlarda joylashishi dermal pigmentasiyani belgilaydi.

Odatda pigment buzilishlari ikki asosiy guruhga bo‘linadi:

1. **Me'yoriy pigmentning miqdoriy va sifatiy taqsimoti buzilishlari**;

2. **Ekzogen yoki endogen pigmentlarning terida anomal ravishda mavjudligi**.

Birinchi guruhga teri rangi to‘qlashishi bilan namoyon bo‘ladigan giperpigmentasiyalar va teri oqarishiga olib keladigan leykodermiya kiradi.

Gipermelanoz — bu terida melanin ortiqcha to‘planishi yoki uning normal taqsimlanishining buzilishi bilan bog‘liq holatdir.
Melanodermiya epidermal gipermelanositoz (melanositlar sonining ortishi) yoki epidermal gipermelanozga (epidermisda melanin miqdorining oshishi, melanositlar soni o‘zgarmagan holda) to‘g‘ri keladi. Serulodermiya esa dermal gipermelanositoz (dermada melanin sintez qiluvchi hujayralarning patologik mavjudligi)ga mos keladi.
Nihoyat, disxromiya terida endogen yoki ekzogen kelib chiqishga ega pigmentlarning anomal mavjudligi bilan bog‘liq bo‘lishi mumkin.
Pigmentasiya ichki va tashqi omillarga bog‘liq.
Ichki omillar quyidagilar bo‘lishi mumkin:
• Irsiy
• Endokrin
• Yallig‘lanish
• Nerv tizimiga bog‘liq
• Oziq moddalar etishmovchiligi
Tashqi omillarga quyidagilar kiradi:
• Quyosh nurlari ta'siri (insolyasiya)
• Teri shikastlanishlari
• Kimyoviy moddalar ta'siri
• Dori vositalarini qabul qilish

Epidemiologiya

Bunday o‘zgarishlar jinsi va yoshiga qaramasdan uchraydi. Eng yuqori moyillik Fitspatrik bo‘yicha III–VI fototipdagi teriga ega odamlarda kuzatiladi [3,8,9,14,16]. Bu holda pigmentasiyaning fototipga bog‘liqligi irqiy/etnik moyillikka nisbatan ko‘proq ekani qayd etilgan [14,15]. Shuningdek, giperpigmentasiya kuchayishi bilan teri rangi orasida bog‘liqlik mavjud: teri rangi qancha to‘q bo‘lsa, pigmentasiya shuncha kuchli va uzoq saqlanuvchi bo‘lishi mumkin [9].
Ushbu holat bo‘yicha yagona statistik ma'lumotlar mavjud emas. Turli tadqiqotchilarga ko‘ra, giperpigmentasiya tarqalishi umumiy populyasiyada 1%dan boshlab yuqori xavf guruhlarida 50%gacha etishi mumkin. Ma'lumot to‘plash qiyinligi bu holatning differensial diagnostikasi murakkabligi va yengil shakldagi giperpigmentasiyaga ega odamlarning shifokorga murojaat qilishi juda kam ekani bilan bog‘liq [24].
Tibbiy statistika ma'lumotlariga ko‘ra, giperpigmentasiya rivojlanishiga eng ko‘p moyillik — 25 yoshdan 50 yoshgacha bo‘lgan, Fitspatrik bo‘yicha 3–6 fototipdagi teriga ega ayollarda kuzatiladi [1,3,18]. Bu holatda erkaklar va ayollar o‘rtasidagi o‘rtacha nisbat 1:9 ni tashkil etadi [3,24].
Ayrim mualliflarning ta'kidlashicha, giperpigmentasiya rivojlanishiga lotinamerikalik, osiyolik va to‘q teriga ega etnik guruhlarga mansub ayollar eng ko‘p moyil bo‘ladi [8].
Turli manbalarga ko‘ra, homilador ayollarning 15%dan 75%gacha giperpigmentasiya muammosiga duch keladi [5,7].
Oxronoz alomatlari, asosan, 30–50 yoshdagi erkaklarda kuzatiladi.
Tatuajlar ham erkaklar, ham ayollar orasida keng tarqalgan. 2015 yildagi Harris Poll tadqiqotiga ko‘ra, AQSh katta yoshdagi aholisining 29%i kamida bitta tatuirovkaga ega bo‘lgan, bu esa to‘rt yil oldingiga nisbatan 8%ga ko‘pdir [2].

Klassifikasiya
Asosiy tasniflash — bu amerikalik dermatolog Tomas Fispatrik tomonidan ishlab chiqilgan klassifikasiya hisoblanadi:

I. Keltcha fototip — teri hech qachon qizarmaydi, doimo kuyib ketadi (juda oq teri, sariq yoki qizil sochlar, ko‘k yoki yashil ko‘zlar, sepkillar mavjud).

II. Oq terili evropalik — ba'zan teri qizaradi, lekin ko‘pincha kuyib ketadi (oq teri, tusli yoki qahvarang sochlar, ko‘k yoki yashil ko‘zlar).

III. To‘qroq evropalik — teri ko‘pincha qizaradi, ba'zan kuyib ketadi (o‘rtacha teri rangi, qora tusli yoki qahvarang sochlar, odatda jigarrang ko‘zlar).

IV. O‘rta yer dengizi/osiyolik fototip — teri tez qizaradi, kamdan-kam hollarda kuyib ketadi (och jigarrang teri, jigarrang yoki to‘q tusli sochlar, odatda jigarrang ko‘zlar).

V. Hind fototipi — teri hech qachon kuymaydi (juda to‘q teri, qora sochlar, qora ko‘zlar).

VI. Afrika fototipi — teri hech qachon kuymaydi (qora teri, qora sochlar, qora ko‘zlar).

Ultrabinafsha nurlanishga nisbatan fototiplar quyidagicha baholanadi: I va II fototiplar — melanodefisitli (himoya yo‘q), III va IV — melanokompetentli (orttirilgan himoya bor), V va VI — melanoprotektorli (tug‘ma himoya mavjud).

Hozirgi kunda teri rangi haqida integral bahoni kolorimetrik metodlar orqali olish mumkin. Spektrofotometr yordamida 400–700 nm diapazondagi ko‘rinadigan nurni aks ettirish o‘lchanadi va quyidagi ko‘rsatkichlar aniqlanadi:

- L* — yorug‘lik darajasi;

- a* va b* — xromatik koordinatalar (yashil-qizil va ko‘k-sariq o‘qlar);
- ITA — individual-tipologik burchak (pigmentasiya kuchini ko‘rsatadi);
- C* — rang to‘yinganligi;
- h* — rang soyasi.

Pigmentasiyalar kelib chiqishiga ko‘ra quyidagicha bo‘linadi:

- Irsiy kasalliklar bilan bog‘liq (qora akantoz, neyrofibromatoz, Peyts — Egers kasalligi, pigment saqlab bo‘lmaslik);
- Teri rivojlanish nuqsonlari va o‘smalar bilan bog‘liq (melanositar nevuslar, Dyubreya melanozi, melanoma, lentigo);
- Gormonal ta'sirlar bilan bog‘liq (homiladorlikdagi melazma, Addison kasalligi, akromegaliya, gipotireoz).

Patogenezga ko‘ra pigmentasiyalar:

- Melanositlar soni ortishi bilan bog‘liq
- Melanin miqdori ortishi bilan bog‘liq
- Nemelaninli pigmentasiyalarga bo‘linadi.

Klinik ko‘rinishiga qarab giperpigmentasiyaning to‘rt asosiy shakli ajratiladi:

- 1. Sentrofasial shakl — pigmentasiya o‘choqlari peshona markazida, yonoqlarda, yuqori labda (filtrumdan tashqari), burining ustida va dahanda kuzatiladi. Bu klinik variant eng ko‘p uchraydigan shakl hisoblanadi — holatlarning 50–80%ini tashkil qiladi [1,4,7,10,20,24].
- 2. Yonoq (molyar) shakli — teridagi o‘zgarishlar yonoqlar (molyar proeksiyasi) va burinning atrofida joylashadi. Bu giperpigmentasiya shakli, odatda, erkak bemorlar uchun xos hisoblanadi [1,4,7,10,20,25].
- 3. Mandibulyar shakl — pigmentasiya pastki jag‘a burchaklarida kuzatiladi. Bu jarayon, odatda, 40 yoshdan keyin boshlanadi va eng ko‘p qariyalar orasida uchraydi [1,4,7,10,20,24].
- 4. Ekstrafasial (yuzdan tashqari) shakl — kam uchraydigan tur hisoblanib, u yonoqlarning tashqi tomonlarida, bo‘yinda, yuqori qo‘llarda, oldingi va orqa dekolte sohasida, qorindagi pigmentasiya o‘choqlarini o‘z ichiga oladi. Ayrim tadqiqotchilarning fikricha, bu shakl ko‘proq perimenopauza holatidagi ayollar orasida rivojlanadi [1,4,7,10,20,24,28].

Pigmentning joylashuv chuqurligiga qarab giperpigmentasiyaning uchta shakli farqlanadi:

- ● **Epidermal shakl** — dog‘lar jigarrang, och, sarg‘imtir yoki to‘q jigarrang tusda bo‘lib, ko‘p hollarda mustaqil ravishda yo‘qolishi mumkin [1,4,10]. Vud lampasi yordamida tekshirilganda dog‘larning rangi kuchayadi va to‘q jigarrang tusga kiradi [16]. Gistologik jihatdan, keratinositlarda pigment miqdori ortishi kuzatiladi; bu melanogenez faollashgani bilan bog‘liq, lekin melanositlar soni o‘zgarmaydi [9,15,19].
- ● **Dermal shakl** — dog‘lar to‘q jigarrang, kulrang-qahvarang, kulrang ko‘kish yoki qora tusda bo‘ladi; agar tegishli davo qo‘llanilmasa, terida uzoq vaqt saqlanishi mumkin [1,4,9,10]. Gistologik jihatdan, pigment dermadagi makrofaglarda to‘plangan bo‘ladi. Shuningdek, melanogenez faol bo‘lsada, perifollikulyar va perivaskulyar limfositar infiltrasiya, fibroz holatlari, hamda epidermisda pigment miqdorining kamayishi kuzatiladi [9,15,19,21].
- ● **Aralash shakl** — har ikki shaklga xos belgilari mavjud bo‘lishi mumkin [9,10].

Klinik manzara

Aniq chegaralangan, simmetrik joylashgan giperpigmentasiya och jigarrangdan to‘q jigarranggacha bo‘lib, ba'zan sarg‘imtir tusga ega ham bo‘ladi. Yuzaki (epidermal) joylashgan pigment, odatda, aniq chegaralarga va tiniq jigarrang tusga ega bo‘ladi. Agar pigment dermal qatlamda joylashgan bo‘lsa, dog‘lar rang jihatidan ko‘proq oqimtir bo‘lib, ko‘ksimon-kulrang tusga ega bo‘lishi mumkin; bu holda

toshmalarning chegaralari aniq bo‘lmaydi, tarqoq va xira bo‘ladi. Aralash shaklda esa toshmalar jigarrang-kulrang rangda yoki rang tarqalishi notekis holatda bo‘lishi mumkin.

Pigmentlangan sohalarning o‘rtacha diametri 2 dan 8 mm gacha bo‘lib, ular aylana shaklida, ko‘p halqali yoki kamonsimon ko‘rinishda bo‘ladi. Kichik pigment dog‘lari bir-biriga qo‘shilib, noto‘g‘ri shakldagi kattaroq o‘choqlarni hosil qilishi mumkin.

Bemorlarning 2/3 qismida dog‘lar yuzning markaziy qismida joylashadi — peshona, burin, yuqori lab usti va egak sohalari. Kamroq hollarda dog‘lar yonoqlar va pastki jag‘ burchaklarida, yanada kamroq hollarda bo‘yin, qo‘llarning tashqi qismi va oldingi va orqa dekolte sohalarida uchraydi. Shilliiq pardalar jarayonga jalb etilmaydi.

Agar giperpigmentasiya homiladorlik davomida yuzaga kelsa, ko‘krak so‘rg‘ichlari va uning areolasi, qorinning oq chizig‘i, ko‘krak pasti, kindik atrofi, tashqi jinsiy a'zolar va kichik lablar chegaralarida ham pigmentasiya kuzatilishi mumkin [1,3,4,5,7,15].

Tatuirovka qo‘yilgandan keyin har xil intensivlikdagi pigmentasiya aniqlanadi.

Shikoyatlar va anamnez

Bemorlar yuz va tananing ochiq sohalarida joylashgan, rangi och jigarrangdan to‘q kulranggacha o‘zgaruvchi dog‘lardan shikoyat qilishadi [30]. Odatda, toshmalar hech qanday sub'ektiv belgilari (qichishish, og‘riq va h.k.) bilan kechmaydi.

Anamnez yig‘ishda genetik moyillik, quyosh nuri ta'siriga uchrash chastotasi, ginekologik anamnez (homiladorlik, gormonal terapiya, peroral kontraseptivlarni qabul qilish), endokrinologik anamnez (qalqonsimon bez kasalliklarining mavjudligi), fotosensibilizator xususiyatiga ega dori vositalarini qabul qilish (peroral kontraseptivlar, o‘rin bosuvchi gormonal terapiya, ayrim antibiotiklar, fenitoin va boshqalar) inobatga olish lozim [15,36,38,39,46].

Fizik tekshiruv

Diagnoz xos klinik manzara va kosmetolog shifokor ko‘rigining natijalari asosida qo‘yiladi.
Zarur hollarda shikastlanish maydoni va og‘irlik darajasini qo‘shimcha ravishda aniq baholash uchun MASI indeksi (Ilova G1), modifikasiyalangan shikastlanish maydoni va og‘irlik indeksi (mMASI) (Ilova G2) hamda giperpigmentasiya og‘irlik shkalasi (MSS) (Ilova G3)dan foydalanish tavsiya etiladi [22].

Tavsiyalarning ishonchlilik darajasi — S (dalillar ishonchlilik darajasi — 5).

Izohlar:
MASI — bu integral ko‘rsatkich bo‘lib, u giperpigmentasiyaning oltita ob'ektiv belgisini balli baholashni o‘z ichiga oladi: shikastlangan maydon (A), pigmentasiyaning yaqqolligi (D) va bir xilligi (H). Ushbu ko‘rsatkich asosida indeks hisoblanadi va og‘irlik darajasi 0 dan 48 gacha baholanadi.
mMASI indeksi — shikastlangan maydon va pigmentasiyaning yaqqolligini baholaydi, umumiy indeks 0 dan 24 gacha bo‘lishi mumkin.

MSS og‘irlik shkalasi — pigmentasiya intensivligini 0 dan 3 gacha bo‘lgan shkalada baholaydi.

Ilova G1. MASI. Giperpigmentasiya maydoni va og‘irligi indeksi.

MASI indeksi giperpigmentasiyalarning maydoni va og‘irlik darajasini baholash, shuningdek, davolashga nisbatan javobni aniqlash uchun mo‘ljallangan.

Asli nomi: The Melasma Area and Severity Index (MASI).

Manba (ishlab chiquvchilarning rasmiy sayti, validasiya qilingan nashr):

Pandya AG, Hynan LS, Bhore R, Riley FC, Guevara IL, Grimes P, Nordlund JJ, Rendon M, Taylor S, Gottschalk RW, Agim NG, Ortonne JP. Reliability assessment and validation of the Melasma Area and Severity Index (MASI) and a new modified MASI scoring method. J Am Acad Dermatol. 2011 Jan;64(1):78-83, 83.e1-2. doi: 10.1016/j.jaad.2009.10.051. Epub 2010 Apr 15. PMID: 20398960.

Tip (tagiga chizilsin):

- baholash shkalasi
- indeks
- so‘rovnoma
- boshqa (aniqlashtirilsin):

Mo‘ljallanishi: giperpigmentasiyalarning maydoni va og‘irlik darajasini baholash uchun.
Tarkibi (shablon):
Hisob-kitob uchun yuz 4 ta sohaga bo‘linadi, har bir sohaga yuz maydonining ma'lum foizi to‘g‘ri keladi (peshona (f) — 30%, o‘ng yuz sohasi (rm) — 30%, chap yuz sohasi (lm) — 30% va engak (c) — 10%).

Har bir sohaning maydoni (A) 0 dan 6 gacha bo‘lgan shkala bo‘yicha baholanadi (0 — shikastlanish yo‘q, 1 — <10%, 2 — 10-29%, 3 — 30-49%, 4 — 50-69%, 5 — 70-89%, 6 — 90-100%).
So‘ng, pigmentasiyaning aniq ifodalanishi (D) va uning bir xilligi (H) 0 dan 4 gacha bo‘lgan shkala bo‘yicha baholanadi (0 — yo‘q, 1 — zaif, 2 — o‘rtacha, 3 — aniq ifodalangan, 4 — eng yuqori darajada).
MASI ni hisoblash formulasi:
0,3A(f)[D(f)+H(f)] + 0,3A(rm)[D(rm)+H(rm)] + 0,3A(lm)[D(lm)+H(lm)] + 0,1A(c)[D(c)+H(c)].
Kalit (interpretasiya): Yakkuniy baholash natijasi 0 dan 48 gacha bo‘lishi mumkin.

Ilova G2. mMASI. Giperpigmentasiya maydoni va og‘irligining modifisirlangan indeksi.

MASI indeksi giperpigmentasiyalarning maydoni va og‘irlik darajasini baholash, shuningdek, davolashga nisbatan javobni aniqlash uchun mo‘ljallangan.
Asli nomi: The modified Melasma Area and Severity Index (mMASI).
Manba (ishlab chiquvchilarning rasmiy sayti, validasiya qilingan nashr):
Pandya AG, Hynan LS, Bhore R, Riley FC, Guevara IL, Grimes P, Nordlund JJ, Rendon M, Taylor S, Gottschalk RW, Agim NG, Ortonne JP. Reliability assessment and validation of the Melasma Area and Severity Index (MASI) and a new modified MASI scoring method. J Am Acad Dermatol. 2011 Jan;64(1):78-83, 83.e1-2. doi: 10.1016/j.jaad.2009.10.051. Epub 2010 Apr 15. PMID: 20398960.

Tip (tagiga chizilsin):

- baholash shkalasi
- indeks

- so‘rovnoma

- boshqa (aniqlashtirilsin):

Mo‘ljallanishi: giperpigmentasiyalarning maydoni va og‘irlik darajasini baholash uchun.
Tarkibi (shablon):
Hisob-kitob uchun yuz 4 ta sohaga bo‘linadi, har bir sohaga yuz maydonining ma'lum foizi to‘g‘ri keladi (peshona (f) — 30%, o‘ng yuz sohasi (rm) — 30%, chap yuz sohasi (lm) — 30% va engak (c) — 10%).

Har bir sohaning maydoni (A) 0 dan 6 gacha bo‘lgan shkala bo‘yicha baholanadi (0 — shikastlanish yo‘q, 1 — <10%, 2 — 10-29%, 3 — 30-49%, 4 — 50-69%, 5 — 70-89%, 6 — 90-100%).
So‘ng, pigmentasiyaning aniq ifodalanishi (D) va uning bir xilligi (H) 0 dan 4 gacha bo‘lgan shkala bo‘yicha baholanadi (0 — yo‘q, 1 — zaif, 2 — o‘rtacha, 3 — aniq ifodalangan, 4 — eng yuqori darajada).
mMASI ni hisoblash formulasi: 0,3A(f)*D(f)+ 0,3A(rm)*D(rm) + 0,3A(lm)*[D(lm)+ 0,1A(c)*D(c).

Kalit (interpretasiya): Yakkuniy baholash natijasi 0 dan 24 gacha bo‘lishi mumkin.

Ilova G3. MSS. Giperpigmentasiya og‘irligini baholash shkalasi.

MSS indeksi giperpigmentasiya jarayonining og‘irlik darajasini, shuningdek, davolashga mumkin bo‘lgan javobni baholash uchun mo‘ljallangan.
Asli nomi: Melasma Severity Scale (MSS).
Manba (ishlab chiquvchilarning rasmiy sayti, validasiya qilingan nashr):

Pandya AG, Hynan LS, Bhore R, Riley FC, Guevara IL, Grimes P, Nordlund JJ, Rendon M, Taylor S, Gottschalk RW, Agim NG, Ortonne JP. Reliability assessment and validation of the Melasma Area and Severity Index (MASI) and a new modified MASI scoring method. J Am Acad Dermatol. 2011 Jan;64(1):78-83, 83.e1-2. doi: 10.1016/j.jaad.2009.10.051. Epub 2010 Apr 15. PMID: 20398960.

Tip (tagiga chizilsin):

- baholash shkalasi

- indeks

- so‘rovnoma

- boshqa (aniqlashtirilsin):

Mo‘ljallanishi: giperpigmentasiya jarayonining og‘irlik darajasini baholash uchun.

Tarkibi (shablon):
Ushbu shkaladan foydalanish uchun pigmentlangan dog‘ tusi atrofdagi o‘zgarmagan teri rangi bilan taqqoslanadi.

- 0 – farq kuzatilmaydi. O‘choqlar rangi atrofdagi teri soyasiga taxminan mos keladi.
- 1 – pigmentlangan dog‘lar atrofdagi teriga nisbatan biroz to‘qroq.
- 2 – pigmentlangan dog‘lar o‘rta darajada to‘q.
- 3 – pigmentlangan dog‘lar atrofdagi teriga nisbatan aniq to‘qroq va sezilarli farqda.

Kalit (interpretasiya): Natija 0 dan 3 gacha bo‘lgan shkala bo‘yicha baholanadi (0 – yo‘q, 1 – yengil daraja, 2 – o‘rtacha daraja, 3 – og‘ir daraja).

MELASQOL. Shkala kachestva jizni pasientov s melazmoy.

MELASQOL indeksi melazma bilan og‘rigan bemorlarning hayot sifati darajasini baholash uchun mo‘ljallangan.

Asli nomi: The Melasma Quality of Life Scale MELASQOL

Manba ishlab chiquvchilarning rasmiy sayti va validasiya qilingan nashr

Balkrishnan R, McMichael AJ, Camacho FT, Saltzberg F, Housman TS, Grummer S, Feldman SR, Chren MM. Development and validation of a health-related quality of life instrument for women with melasma. Br J Dermatol. 2003 Sep;149(3):572-7. doi: 10.1046/j.1365-2133.2003.05419.x. PMID: 14510991.

Kuradoves A.A. Melazmani baholash uchun kosmetologik amaliyotda qo‘llanishga mo‘ljallangan melasqol so‘rovnomasining ruscha versiyasini ishlab chiqish va validasiya qilish // Sog‘liq va ta'lim XXI asrda. 2018. №4.

Tip (tagiga chizilsin):

- baholash shkalasi

- indeks

- so‘rovnoma

- boshqa (aniqlashtirilsin):

Mo‘ljallanishi: melazma bilan kasallangan bemorlarning hayot sifatini baholash uchun.

Tarkibi (shablon):

MELASQOL xalqaro so‘rovnomasi

N	Savolning asl ko‘rinishi	O‘zbek tiliga tarjimasi
1	The appearance of your skin condition	Teringizning tashqi ko‘rinish holati
2	Frustration about your skin condition	Teringiz holatidan shikoyat
3	Embarrassment about your skin condition	Teringiz holatidan kelib chiqqan noqulay his
4	Feeling depressed about your skin condition	Teringiz holatiga nisbatan depressiya
5	The effects of your skin condition on your interactions with other people (e.g. interactions with family, friends, closerelationship, etc.)	Teringiz xolatining boshqa odamlar bilan munosabatlaringizga ta'siri (masalan, oila, do‘stlar, yaqinlar bilan o‘zaro aloqalar)
6	The effects of your skin condition on your desire to be with people	Teringiz xolatining odamlar bilan bo‘lish istagingizga ta'siri
7	Your skin condition making it hard to show affection	Teringiz holati odamlarga nisbatan bog‘liqlik xissini namoyon qilishingizga to‘sqinlik qilishi
8	Skin discoloration making you feel unattractive to others	Teringiz rangining o‘zgarishi boshqalar oldida jozibadorlikni sezmaslikka sabab bo‘lishi

9	Skin discoloration making you feel less vital or productive	Teringiz rangining o‘zgarishi o‘zingizni hayotda muhim va mahsuldor his qilishingizga to‘sqinlik qilishi
10	Skin discoloration affecting your sense of freedom	Teringiz rangining o‘zgarishi erkinlik tuyg‘uga ta'sir qilishi

Kalit (interpretasiya): Psixometrik Likert shkalasi (1 dan 7 gacha)dan foydalanib, har bir savol bo‘yicha ballarni yig‘ish orqali MELASQOL shkalasi indeksi hisoblanishi mumkin (7 dan 70 gacha). Indeks qiymati qanchalik yuqori bo‘lsa, kasallik bemorning hayot sifatiga shunchalik salbiy ta'sir ko‘rsatadi.

MELASQOL indeksi qiymatlarining talqini

Indeks qiymati	Talqin
0-7	Teri kasalligi bemor xayotiga ta'sir qilmaydi
8-25	Kasallik bemor hayotiga kam ta'sir qiladi
26-40	Kasallik bemor hayotiga o‘rta ta'sir qiladi
41-54	Kasallik bemor hayotiga kuchli ta'sir qiladi
55-70	Kasallik bemor hayotiga o‘ta kuchli ta'sir qiladi

Laborator diagnostik tekshiruvlar

S 5	Umumiy qon tahlili, qonda rux, mis, temir va ferritin miqdorini aniqlash tavsiya qilinadi

Izohlar: Anemik sindrom, yallig‘lanish belgilari va ehtimoliy zaharlanishni aniqlashga imkon beradi.

S 5	Zahm uchun skrining testlar – MPR, RPR lardan birini o‘tkazish talab qilinadi

Izohlar: teri belgilari bilan namoyon bo‘luvchi yashirin infeksiyalarni inkor etish.

S 5	Qonda qalqonsimon bez gormonlari darajasini tekshirish tavsiya etiladi

S 5	Qonda jinsiy gormonlar darajasini tekshirish tavsiya etiladi

S 5	Qon ivish vaqtini aniqlash tavsiya etiladi

Izohlar: Qonning birlamchi qon quyqasi hosil bo‘lish tezligini aniqlash yoshi katta bemorlarda terining yaxlitligini buzuvchi muolajalarni rejalashtirishda muhim ahamiyatga ega.

S 5	Qonda D-dimer darajasini aniqlash tavsiya etiladi

Izohlar: Fibrinolizning faollashuvi va trombotik asoratlarning mavjudligini baholash, bu ayniqsa yondosh tomir kasalliklari bo‘lgan yoshi katta bemorlarda apparatli yoki in'eksion muolajalardan oldin muhimdir.

S 4	Agar boshqa kasalliklardan differensial tashxis qo‘yish zarur bo‘lsa, biopsiya materialining patologoanatomik tekshiruvini o‘tkazish tavsiya etiladi.

Izohlar: Epidermal turda: epidermisning bazal va suprabazal qatlamlarida joylashgan melanositlar katta hajmda bo‘lib, ko‘p miqdorda melanosomalarni o‘z ichiga oladi, dendrit shaklidagi shoxlanishlarning ko‘payishi qayd etiladi. Dermal turda: yuzaki va chuqur perivaskulyar infiltratlar kuzatiladi, ular melanofaglardan iborat. Melanositlar va melaninning dermaga kirishi. Quyosh elastozining belgilari mavjudligi. Vaskulyarizasiyaning kuchayishi.

Instrumental diagnostik tadqiqotlar

S 5	Pigmentning joylashish chuqurligini aniqlash uchun Vud lyuminessent lampasi (340-400 nm) yordamida tekshirish tavsiya etiladi.

Izohlar: Epidermal turda Vud lampasi nurlari ostida pigment eng yorqin va kontrastli o‘lib ajralib turadi. Dermal turda Vud lampasi ostida pigmentasiya kuchaymaydi, terining pigmentlanmagan joylari bilan solishtirilganda kontrasti aniqroq bo‘lmaydi. Aralash turda Vud lampasi ostida ba'zi sohalar yorqin va kontrastli bo‘ladi, ba'zilari esa aksincha bo‘ladi. Fispatrikning yuqori fototiplari (IV, V va VI) uchun ushbu tekshiruv kamroq ma'lumot beradi. Oddiy yorug‘likda bunday bemorlarda pigmentasiya ko‘kish-kulrang tusda ko‘rinishi yoki umuman aniqlanmasligi mumkin [10].

S 4	Dermatoskopiya yordamida tekshirish tavsiya etiladi

Izohlar: Epidermal turda diffuz retikulyar pigmentasiya kuzatilib, bunda jigarrangning turli tuslariga bo‘yalgan va follikul teshiklari saqlangan bo‘ladi. Dermal turda esa to‘q jigarrangdan to kulranggacha bo‘lgan diffuz psevdoretikulyar pigmentasiya, halqa, uyacha va yarimhalqa shaklidagi naqshlar, «boyo‘g‘li ko‘zi» (markaziy qorong‘u nuqta atrofida oq halqa) tipidagi strukturalar, vaskulyarizasiyaning ko‘payishi va teleangiektaziyalar kuzatiladi.

S 5	Teri holati kompyuter diagnostikasini o‘tkazish tavsiya etiladi

Izohlar: Teriga noinvaziv tahlil o‘tkazuvchi kompyuter tizimlari xronoqarish va fotoqarish belgilariga baho berishda qo‘llaniladi, shuningdek, pigmentasiya, eritema, teri teksturasi, poralar, ajinlar va teri sezuvchanligi kabi parametrlarni vizualizasiya va tahlil qilish imkonini beradi. Klinik tadqiqotlar ushbu tizimlarni fotozararlanish holatlarini va davolash vositalariga javobni miqdoriy monitoring qilishda, shuningdek, qarishga qarshi terapiya jarayonidagi dinamik kuzatuvda samarali ekanini tasdiqlagan.

S 5	Giperpigmentasiya uchoqlari mavjud bo‘lganda, tahlil qilinayotgan teri sohasini melanin miqdori va eritema darajasi bo‘yicha miqdoriy baholash maqsadida meksametriya usuli bilan diagnostika o‘tkazish tavsiya etiladi.

Izohlar: Meksametriya usuli yorug‘likning so‘rilishi va aks etishiga asoslangan bo‘lib, tahlil qilinayotgan teri sohasida melanin miqdori va eritema darajasini miqdoriy aniqlash imkonini beradi. [27].

S 5	Fotohujjatlash tavsiya etiladi

Izohlar: Standartlashgan fotofiksasiya (doimiy yorug‘lik va to‘g‘ri joylashtirish bilan) giperpigmentasiyalarning dinamikasi va davolash samaradorligini monitoring qilish uchun tavsiya etilib, miqdoriy usullar bilan birgalikda vizual nazoratning asosiy vositasi hisoblanadi.

S 5	Ichki a'zolar ultratovush tekshiruvi tavsiya etiladi

Quyidagi holatlarda ko‘rsatma bo‘yicha boshqa mutaxassislar konsultasiyalari tavsiya etiladi:

S 5	Metabolik sindrom, semizlik, 2 tip qandli diabet aniqlanganda, gormonal statusni tuzatish maqsadida endokrinolog shifokori bilan konsultasiya o‘tkazish tavsiya etiladi. Shuningdek, terapiyaga qarshi ko‘rsatmalarni istisno qilish, davolash natijalarini bashorat qilish, parhez va gormonal fonni tuzatish orqali terapiya samarasini oshirish masalalarini hal etish maqsadida ham endokrinolog ko‘rigidan o‘tish tavsiya etiladi.

Izohlar: Qo‘shimcha tekshiruv va davolash hajmi hamda xususiyatini aniqlash maqsadida.

S 5	Olib borilayotgan davolash uchun qarshi ko‘rsatmalarni istisno qilish maqsadida terapevt shifokori bilan konsultasiya o‘tkazish tavsiya etiladi.

S 5	Akusher-ginekolog shifokori bilan konsultasiya o‘tkazish tavsiya etiladi.

Izohlar: Jinsiy gormonlar darajasini aniqlash va tuzatish maqsadida.

Giperpigmentasiyalarning differensial diagnostikasi

№	**Holat/kasallik**	**O‘ziga xosligi / Farqlovchi belgilari**	**Izohlar**
1.	Sepkillar (efelidlar)	Kichik, och jigarrang dog‘lar, ko‘pincha quyosh ta'sirida yuz, elka va qo‘llarda paydo bo‘ladi.	Genetik moyillik, quyoshga nisbatan sezuvchanlik oshishi.
2.	Xloazma (melazma)	Notog‘ri shakldagi pigment dog‘lari, odatda yuzda bo‘ladi, ko‘pincha homiladorlik yoki gormonal o‘zgarishlar bilan bog‘liq.	Gormonal o‘zgarishlar, homiladorlik, kontraseptivlar, genetik moyillik.

3.	Jarohatdan keyingi giperpigmentasiya	Teridagi jarohatlar, kuyishlar, akne yoki boshqa shikastlanishlardan keyin yuzaga keladigan to‘q rangli dog‘lar.	Yallig‘lanish, teri shikastlanishi va tuzalishidan keyingi pigmentasiya
4.	Yallig‘lanishdan keyingi giperpigmentasiya	Akne yoki dermatit kabi teridagi yallig‘lanish jarayonlaridan keyin yuzaga keladigan to‘q rangli dog‘lar.	Yallig‘lanish, pigmentasiyaning yallig‘lanishdan keyingi buzilishi.
5.	Lentigo	Xolga o‘xshash to‘q rangli dog‘lar, yakka holda yoki ko‘p sonda bo‘lishi mumkin, ko‘pincha yosh o‘tishi bilan paydo bo‘ladi	Quyosh ta'siri, terining qarishi, genetik moyillik.
6.	Quyoshli elastoz	Quyoshning uzoq ta'siri natijasida terining qalinlashishi va sariqlashishi.	Ultrabinafsha nurlanishining doimiy ta'siri.
7.	Vitiligo	Pigmentasiyaning yo‘qolishi, terida oq dog‘lar, autoimmun kasallik.	Autoimmun kasallik, melanin ishlab chiqarilishidagi buzilish.
8.	Dori etiologiyali giperpigmentasiya	Dori vositalar qabul qilinishi natijasida yuzaga kelgan giperpigmentasiya.	Antibiotiklar, gormonal preparatlar, sitostatiklar va boshqa dori vositalari.

Davolash, shu jumladan nomedikamentoz terapiya, davolash usullarini qo‘llash bo‘yicha tibbiy ko‘rsatmalar va qarshi ko‘rsatmalar.

Barcha bemorlarga klinik shakli, kasallik og‘irligi va tanlangan terapiya taktikasiga qaramasdan, har kuni teriga quyoshdan himoya vositalarini tashqi qo‘llash tavsiya etiladi [49, 50, 24, 51, 52, 53].

Tavsiyalarning ishonchlilik darajasi — S (dalillar ishonchlilik darajasi — 5).

Izohlar: Quyoshdan himoya vositalarini har kuni SPF 30 PA++++ (Broad-spectrum) himoya faktori bilan qo‘llash tavsiya etiladi. Quyoshdan himoya vositasi etarlicha miqdorda (2 mg/sm² yoki «choy qoshiqchasi» qoidasiga muvofiq (Ilovasi G5)), quyoshga chiqishdan 15–30 daqiqa oldin surtilishi zarur. Quyoshda 2–3 soatda bir marta yoki suv bilan kontaktdan so‘ng darhol qayta qo‘llanishi kerak. Teri barerining yaxlitligini buzuvchi muolajalardan (kimyoviy pilinglar, lazerli aralashuvlar) keyin fizik filtrlarga ega quyoshdan himoya vositalaridan (sink oksidi, titan dioksidi) foydalanish afzal hisoblanadi [1,114].

Davolash: Estetik kamchiliklarni tuzatish usulini tanlash klinik ko‘rinishga, qarshi ko‘rsatmalarga va kosmetolog shifokor kabinetining jihozlanishiga bog‘liq.

Medikamentoz davolash

O‘zbekiston Respublikasida klinik protokolga ro‘yxatdan o‘tkazilmagan dori vositalarini kiritish kafolatlangan bepul tibbiy yordam hajmi va majburiy ijtimoiy tibbiy sug‘urta tizimi doirasida xarajatlarni qoplash uchun asos bo‘lmaydi.

Jadval - 1

Asosiy dori vositalari ro‘yxati (foydalanish extimoli 100%dan kam):

Farmakoterapevtik guruh	Dori vositasi halqaro nomi	Qo‘llash usuli	Ishonchlilik darajasi
Mahalliy davolash	Azelain kislotasi 15–20%	Krem yoki gel, mahalliy kuniga 1–2 maxal	B 3 https://pmc.ncbi.nlm.nih.gov/articles/PMC9165630/
Mahalliy davolash	Gidroxinon 2%	Mahalliy kuniga 1–2 raza maxal, 2–6 oy, so‘ng qo‘llab-quvvatlovchi terapiya	B 3 https://pmc.ncbi.nlm.nih.gov/articles/PMC11439988/
Mahalliy davolash	Koy kislotasi 1–4%	Mahalliy kuniga 1–2 maxal natijaga erishilguncha	B 3 https://pmc.ncbi.nlm.nih.gov/articles/PMC9805721
Mahalliy davolash	Niasinamid 2–5%	Mahalliy kuniga 1–2 maxal natijaga erishilguncha	B 3 https://pubmed.ncbi.nlm.nih.gov/39350932
Mahalliy davolash	Askorbinovaya kislota i proizvodnie	Mahalliy kuniga 1–2 maxal natijaga erishilguncha	B 3 https://www.dovepress.com/tranexamic-acid-for-the-treatment-of-hyperpigmentation-and-telangiecta-peer-reviewed-fulltext-article-CCID
Mahalliy davolash	Traneksamovaya kislota 3–6.5%	Mahalliy kuniga 1–2 maxal natijaga erishilguncha	B 3 https://ijdvl.com/the-optimal-dose-of-oral-tranexamic-acid-in-melasma-a-network-meta-analysis
Mahalliy davolash	Arbutin	Mahalliy kuniga 2 maxal natijaga erishilguncha	B 3 https://www.mdpi.com/2079-9284/9/5/108
In'eksion davolash	Vitamin C, koy kislotasi va b. bilan biorevitalizasiya	7-14 kunlik interval bilan 6 ta muolaja	B 3 https://pdfs.semanticscholar.org/bdbd/4dceba627325514b08ca95d75f73db7b3dfb.pdf
In'eksion davolash	Traneksam kislotasi, glutation va b. bilan mezoterapiya	7 kunda 1 marotaba, umumiy 6 ta muolaja	B 3 https://www.medicaljournals.se/acta/content/html/10.2340/00015555-2668

Mahalliy davolash	Yuzaki kimyoviy pilinglar (glikol kislotasi 30–50%, sut kislotasi, bodom kislotasi, salisil kislotasi)	7-10 kunda 1 marotaba, umumiy 4-6 ta muolaja	B 3 https://www.instyle.com/tranexemic-acid-for-skin-11730366
In'eksion davolash	PRP (trombositlarga boyitilgan plazma)	2-4 haftalik interval bilan umumiy 4–5 ta muolaja	B 3 https://www.medicaljournals.se/acta/content/html/10.2340/00015555-2668
Tizimli davolash	Traneksam kislotasi 250 mg	Koagulogrammadan so‘ng kuniga 2 maxal, 6 oygacha	B 3 https://www.medicaljournals.se/acta/content/html/10.2340/00015555-2668
Tizimli davolash	Glutation 500 mg	Kuniga 1 maxal, kurs davomiyligi individual tanlanadi	B 3 https://www.medicaljournals.se/acta/content/html/10.2340/00015555-2668

Eslatma: Dori-darmonlarning dozasi va miqdori shifokor tomonidan individual belgilanadi.
Terini namlovchi vositalar (emolentlar), tibbiy vositalar, biologik faol qo‘shimchalar, mikroelementlar, vitaminlar, antioksidantlar va kosmetologik vositalar dermatologik bemorlarni davolashda zarur holatlarda qarshi ko‘rsatmalari bo‘lmasa va O‘zbekiston Respublikasi hududida sertifikatga ega bo‘lsa qo‘llanilishi mumkin.
Agar zarur preparat belgilangan ro‘yxatda mavjud bo‘lmasa va vaqtincha etishmasa, shifokor o‘xshash terapevtik maqsadga ega, lekin turlicha ta'sir mexanizmli preparatni tanlashi mumkin.
Dori vositasi klinik vaziyat, bemorning holati va mavjud resurslarga asoslanib amalga oshiriladi

«GIPERPIGMENTASIYA» NOZOLOGIYASI BO‘YICHA TIBBIY ARALASHUVLARNING MILLIY KLINIK PROTOKOLI

Kirish.
Giperpigmentasiya — terining pigmentasiyasiga doir eng keng tarqalgan buzilishlardan biri bo‘lib, derma yoki epidermisning ma'lum sohalarida melaninning haddan tashqari to‘planishi bilan xarakterlanadi. Bu holat mustaqil estetik muammo sifatida namoyon bo‘lishi yoki turli dermatologik yoki endokrin kasalliklarning belgisi bo‘lishi mumkin. Giperpigmentasiyaning eng ko‘p uchraydigan shakllari quyidagilarni o‘z ichiga oladi: melazma, yallig‘lanishdan keyingi giperpigmentasiya va quyosh (lentigioz) dog‘lari.

Mazkur milliy klinik protokollarni ishlab chiqishdan maqsad — tibbiy kosmetologiya doirasida giperpigmentasiyaga chalingan bemorlarga ko‘rsatiladigan tibbiy yordamni standartlashtirishdir. Protokollar zamonaviy klinik tavsiyalar, xalqaro ilmiy ma'lumotlar va etakchi mutaxassislarning amaliyotdagi tajribasiga asoslangan holda, xavfsizlik, samaradorlik va har bir bemorga individual yondashuvni hisobga olgan holda ishlab chiqilgan.

Konservativ davolash

Davolash usuli, xususan in'eksion yoki apparatli usullardan biri klinik manzaradan kelib chiqib tanlanadi.

Noinvaziv usullar

• Giperpigmentasiyani korreksiyalash maqsadida ultratovushli pilingdan foydalanish ta**vsiya etiladi** [1]:
Tavsiyalarning ishonchlilik darajasi — S (dalillar ishonchlilik darajasi — 5).

Izohlar*: Giperpigmentasiyani korreksiyalash maqsadida ultratovushli terapiya 10–15 muolajadan iborat kurs sifatida (haftasiga 2–3 marta) o‘tkaziladi.*

• Pigment dog‘lari va epidermis hamda dermadagi tomir o‘zgarishlarini davolash uchun teri fototerapiyasidan foydalanish **tavsiya etiladi** [1].

Tavsiyalarning ishonchlilik darajasi — B (dalillar ishonchlilik darajasi — 4).

Izohlar*: Selektiv fototermoliz 4–6 muolajadan iborat kurs sifatida (har 3 haftada 1 marta) o‘tkaziladi [17]. Noablyasion lazer ta'siri ham har 3 haftada 1 marotaba, bir kursda 4–6 muolaja ko‘rinishida o‘tkaziladi [1].*

Tavsiyalarning ishonchlilik darajasi — B (dalillar ishonchlilik darajasi — 4).

Izoh: Muolaja parametrlarini tanlash pigmentning joylashish chuqurligi va teri fototipiga bog‘liq.
Tavsiyalarning ishonchlilik darajasi — B (dalillar ishonchlilik darajasi — 4).

<u>Invaziv usullar</u>

<u>Epidermal tip</u>

Mahalliy davolash

B 3	**Azelain kislotasining 20% kremi va 15% gelini mahalliy qo‘llash uchun kuniga 1–2 maxal tavsiya etiladi.**

Izohlar: Davolash davomiyligi individual bo‘lib, kasallikning og‘irlik darajasiga bog‘liq.

B 3	**2% gidroxinonli vositalarni mahalliy kuniga 1–2 maxal, 2–4 oy davomida, kamida 6 oygacha yoki kerakli natijaga erishilgunga qadar qo‘llash tavsiya etiladi. So‘ngra 6 oy yoki undan ortiq muddat davomida qo‘llab-quvvatlovchi terapiyaga o‘tish tavsiya etiladi.**

Izohlar: Gidroxinon qo‘llanishi bilan bog‘liq eng ko‘p uchraydigan nojo‘ya ta'sirlar — irritant kontakt dermatiti, allergik kontakt dermatiti, yallig‘lanishdan keyingi giperpigmentasiya, gipopigmentasiya [57].

B 3	1%-4% li koy kislotasi asosidagi vositalarni kerakli natijaga erishilgunga qadar kuniga 1–2 maxal qo‘llash **tavsiya etiladi:**
B 3	Niasinamid asosidagi 2%–5%li mahalliy vositalarni kuniga 1–2 maxal kerakli natijaga erishilgunga qadar qo‘llash **tavsiya etiladi.**
B 3	Askorbin kislotasi, askorbil-2-fosfat magniy va askorbil-6-palmitat asosidagi mahalliy vositalarni kuniga 1–2 maxal, kerakli natijaga erishilgunga qadar qo‘llash **tavsiya etiladi.**
B 3	Traneksam kislotasi asosidagi 3%–6,5% mahalliy vositalarni kuniga 1–2 maxal, kerakli natijaga erishilgunga qadar qo‘llash **tavsiya etiladi** [71,72,73,74,75,76,77,78].
B 3	Arbutin asosidagi mahalliy vositalarni kuniga 2 maxal, kerakli natijaga erishilgunga qadar qo‘llash **tavsiya etiladi.**

B 3	Yuzaki kimyoviy pilinglar kursini 4–6 muolajadan tashkil etilgan holda, har 7–10 kunda bir marotaba yoki teri to‘liq tiklangunga qadar o‘tkazish **tavsiya etiladi.** [79,80,81,82,83].

Izohlar: Pilinglarda quyidagi kislotalar mavjud bo‘lishi mumkin: glikol kislotasi 30%–50%, sut kislotasi 10%–30%, bodom kislotasi 10%–40%, pirouzum kislotasi 50%, azelain kislotasi, salisil kislotasi 30%, Djessner eritmasi, retinoy kislotasi, uchxloruksus kislotasi 10%–30%.

Apparatli davolash

B 3	Melanogenezga ta'sir qiluvchi preparatlardan foydalangan holda terining dorili ultrafonoforezi **tavsiya etiladi** [120-122].

Izohlar: Melanogenezga supressiv ta'sir ko‘rsatadigan vositalar qatoriga askorbin kislota, arbutin, niasinamid, koy kislota, traneksam kislota, glutation va oqartiruvchi peptidlar kiradi [41,49,50,58-61,63-78].

B 3	Selektiv qisqa impulsli lazerlar va intensiv impulsli nur (IPL)dan foydalanish **tavsiya etiladi** [41,84,85,86,87,88,89,90,91].

Selektiv qisqa impulsli lazerlar:

- Q-Switched Nd:YAG- lazer 1064 nm,,chuqur qatlamlarga kirib boradi.
- Q-Switched Nd:YAG lazeri ikki karrali chastota bilan (532 nm), KTR lazeri. Uch oyda qayta residiv ehtimoli juda yuqori (64-81%). Yallig‘lanishdan keyingi giperpigmentasiya xavfi yuqori bo‘lganligi sababli giperpigmentasiyalarni davolash uchun tavsiya qilinmaydi [88, 92].
- Q-Switched pikosekundli lazer 1064 nm, terining chuqur qatlamlariga kirib boradi [88,90,92].
- QS aleksandrit lazeri (755 nm). Yallig‘lanishdan keyingi giperpigmentasiya xavfi yuqori bo‘lganligi sababli giperpigmentasiyalarni davolash uchun tavsiya qilinmaydi [88].

Intensiv impulsli nur (IPL):

● IPL (500-550 nm).
Uskunaning energiya parametrlari klinik manzara, pigmentning chuqurligi va ishlatilayotgan uskunaga qarab tanlanadi.
Bemorga residiv xavfini kamaytirish uchun qo‘llab-quvvatlovchi mahalliy davolash zarurligi haqida maslahat berish lozim.

Dermal tip

B 3	Bo‘yoqli PDL lazeri, intensiv impuls nurlari (IPL), noablyasion fraksion lazerlardan foydalanish **tavsiya etiladi,** kurs sifatida 1–4 muolaja, har biri orasida 1–2 oy interval bilan o‘tkaziladi [41,84,85,86,87,88,89,90,91].

Izohlar: Melanogenezga supressiv ta'sir ko‘rsatadigan vositalarga askorbin kislotasi, arbutin, niasinamid, koy kislotasi, traneksam kislotasi, glutation va oqartiruvchi peptidlar kiradi [41,49,50,58-61,63-78].

Izohlar:
● Bo‘yoqli PDL lazeri (585-595 nm) — qon tomirlarining nuqsonlarini tuzatish uchun qo‘llaniladi (giperpigmentasiya patogenezida vaskulyarizasiyaning kuchayishi muhim rol o‘ynaydi). Melanin tomonidan kamroq so‘riladi [95].
● Intensiv impuls nurlari IPL (560-1200 nm).
● Noablyasion fraksion lazerlar:
o Q-Switched Nd:YAG lazeri 1064 nm
o Pikosekundli Nd:YAG lazeri fraksion va Zoom rejimida
o Er:Glass lazeri 1540/1550 nm
o Tuliy lazeri 1927 nm, keyin traneksam kislotasi bilan mahalliy zardob qo‘llanilishi bilan
o Tuliy lazeri 1927 nm, keyin ekzosoma bilan mahalliy qo‘llanilishi bilan
Uskunaning energiya parametrlari klinik manzara, pigmentning chuqurligi va ishlatilayotgan uskunalarga qarab tanlanadi.
Bemorga residiv xavfini kamaytirish uchun qo‘llab-quvvatlovchi mahalliy davolash zarurligi haqida maslahat berish lozim.

B 3	Tarkibida traneksam kislotasi bo‘lgan krem yoki geldan foydalanish **tavsiya etiladi.**

U melanin pigmenti ishlab chiqarilishini to‘sadi va mavjud ortiqcha melaninning erishiga yordam beradi.

B 3	Yuzaki-o‘rta va o‘rta darajali kimyoviy pilinglarni 4–6 muolajadan iborat kurs shaklida, har 10–14 kunda bir marotaba yoki teri to‘liq tiklangunga qadar o‘tkazish **tavsiya etiladi** [79,80,81,82,83].

Izohlar: Pilinglarda quyidagi kislotalar mavjud bo‘lishi mumkin: glikol kislotasi >50%, pirouzum kislotasi >50%, salisil kislotasi >30%, Djessner eritmasi (uzoq ekspozisiyada), retinoy kislotasi, uchxloruksus kislotasi >30%.

Pilingdan oldingi tayyorgarlik zarur bo‘lib, u quyidagilarni ta'minlaydi [96]:
● reparativ salohiyatni oshiradi;
● terining to‘siq (barer) xususiyatlarini susaytiradi;
● piling moddasining samarali singishi uchun terining mikrorelefini tekkislaydi;
● melanositlar faolligini kamaytiradi va shu bilan yallig‘lanishdan keyingi giperpigmentasiya xavfini pasaytiradi.

Pilingga tayyorgarlik uchun ishlatiladigan preparat va ingredientlar:
● α-gidroksi kislotalar (AHA) ni 20% gacha konsentrasiyada va pH 3,0 dan kam bo‘lmagan preparatlar;
● taxminan 0,02% konsentrasiyadagi retinol saqlovchi preparatlar;
● kalsiy ionlarini xelatlovchi moddalar (masalan, fitin kislotasi va EDTA) — korneositlar kogeziyasini kamaytirish uchun;
● antioksidantlar va yallig‘lanishga qarshi vositalar.

B 3	Agar davolash samara bermasa, traneksam kislotasini 250 mg tabletka ko‘rinishida kuniga 2 maxal, 6 oydan ortiq bo‘lmagan muddatda qabul qilish **tavsiya etiladi** [49,97,98,99,100,101,102,104].

Izohlar:
Lizinning sintetik hosilasi bo‘lib, plazminogenning keratinositlarda ifoda etiladigan reseptorlar bilan bog‘lanishiga to‘sqinlik qiladi. Shu orqali ultrabinafsha ta'sirida yuzaga keladigan plazmin faolligi, erkin araxidon kislotasi konsentrasiyasi, prostaglandinlar ishlab chiqarilishi, melanositlarda tirozinaza faolligi va melanositstimullovchi gormon darajasi kamayadi.

Shuningdek, traneksam kislotasi qon tomir endoteliy o‘sish omili (VEGF) va endotelin-1 (angiogenez stimulyatorlari) darajasini pasaytiradi [9,24,103].

B 3	Agar terapiya samara bermasa, glutation 500 mg kuniga qabul qilish **tavsiya etiladi [24,106,107].**

Izohlar: Glutation — glutamin, sistein va glisin aminokislotalaridan iborat tripeptiddir. U tirozinazani ingibisiya qiladi, endogen antioksidant hisoblanadi, yallig‘lanishni kamaytiradi va feomelanin sintezini oshiradi.

Aralash tip

B 3	Aralash shaklda davolash epidermisda joylashgan pigment buzilishlarini tuzatishdan boshlash, so‘ngra dermada joylashgan pigment buzilishlarini tuzatishga o‘tish **tavsiya etiladi [10].**

In'eksion usullar

Barcha tiplar

B 3	Melanogenezga ta'sir qiluvchi preparatlar bilan biorevitalizasiya muolajasini 7–14 kunlik interval bilan 6 marta o‘tkazish **tavsiya etiladi [115].**

Izohlar: Muolajalar kursi quyidagi asosdagi preparatlar bilan o‘tkaziladi: karotinoid — Fukoksantin F-199, S vitamini, koy kislotasi, retinol, traneksam kislotasi, glutation va oqartiruvchi peptidlar.

B 3	Melanogenezga ta'sir qiluvchi preparatlar bilan mezoterapiya muolajalarini haftasiga 1 martadan, 6 martalik kurs shaklida o‘tkazish **tavsiya etiladi** [108,109].

Izohlar: Vitamin S, koy kislotasi, retinol, traneksam kislotasi, glutation hamda oqartiruvchi peptidlarga asoslangan preparatlar bilan muolajalar kursi.

B 3	Trombositlarga boyitilgan plazmani (PRP) teri ichiga kiritishni 2-4 hafta oralig‘ida 4-5 marta kurs bo‘yicha **tavsiya qilinadi** [110,111,112,113].

Shifokorning harakat algoritmi

“GIPERPIGMENTASIYA” KASALLIGINI OLDINI OLISh VA REABILITASIYA QILISh BO‘YIChA MILLIY KLINIK PROTOKOL

Kirish.

Giperpigmentasiya — terining pigmentasiyasiga doir eng keng tarqalgan buzilishlardan biri bo‘lib, derma yoki epidermisning ma'lum sohalarida melaninning haddan tashqari to‘planishi bilan xarakterlanadi. Bu holat mustaqil estetik muammo sifatida namoyon bo‘lishi yoki turli dermatologik yoki endokrin kasalliklarning belgisi bo‘lishi mumkin. Giperpigmentasiyaning eng ko‘p uchraydigan shakllari quyidagilarni o‘z ichiga oladi: melazma, yallig‘lanishdan keyingi giperpigmentasiya va quyosh (lentigioz) dog‘lari.

Mazkur milliy klinik protokollarni ishlab chiqishdan maqsad — tibbiy kosmetologiya doirasida giperpigmentasiyaga chalingan bemorlarga ko‘rsatiladigan tibbiy yordamni standartlashtirishdir. Protokollar zamonaviy klinik tavsiyalar, xalqaro ilmiy ma'lumotlar va etakchi mutaxassislarning amaliyotdagi tajribasiga asoslangan holda, xavfsizlik, samaradorlik va har bir bemorga individual yondashuvni hisobga olgan holda ishlab chiqilgan.

Tibbiy reabilitasiya, reabilitasiya usullarini qo‘llash uchun tibbiy ko‘rsatmalar va qarshi ko‘rsatmalar

O‘tkazilmaydi.

Profilaktika va dispanser kuzatuvi, profilaktika usullarini qo‘llash uchun tibbiy ko‘rsatmalar va qarshi ko‘rsatmalar

Giperpigmentasiyalarni shakllanishi va kuchayishini, shuningdek davolashdan keyin residivlarni oldini olish uchun quyosh ta'sirini kamaytirish va mahalliy quyoshdan himoya vositalarini qo‘llash zarur. Bemorlar sog‘lom turmush tarzini saqlash qoidalariga rioya qilishni esda tutishlari kerak, zararli odatlardan voz kechish tavsiya etiladi, to‘g‘ri ovqatlanishga amal qilish muhim.
Har kuni terini tozalash va tonusini saqlash, shuningdek terining turiga mos ravishda tanlangan boshqa mahalliy parvarish vositalaridan foydalanish zarur.

Tibbiy yordamni tashkil etish

Giperpigmentasiyani davolash ambulator amalga oshiriladi.

Bemorlar uchun informasiya

1. Giperpigmentasiyaning kuchayishini oldini olish maqsadida sezgir teri uchun moslashtirilgan maxsus vositalar hamda oqaruvchi komponentlarga ega vositalardan foydalangan holda terini tashqi parvarish qilish tavsiya etiladi.
2. Mavjud giperpigmentasiyaning kuchayishini va yangi o‘choqlar paydo bo‘lishini oldini olish uchun bemorlar provokasiya qiluvchi omillardan qochishlari kerak: atrof muhitning yuqori harorati, isitishga qaratilgan mahalliy muolajalar (vaporizasiya, isituvchi kompresslar, niqoblar va h.k.) hamda ultrabinafsha nurlanishidan (tug‘ridan-to‘g‘ri quyosh nuri ostida bo‘lish, solyariyga borish) saqlanish lozim. Shuningdek, har kuni UVA + UVB50+ quyoshdan himoya vositalarini qo‘llash zarur.

3. Apparatli korreksiya usullarini qo‘llab asosiy davolash kursi tugagandan so‘ng terining to‘liq tiklanishiga qadar ortiqcha ultrabinafsha nurlanishidan (tug‘ridan-to‘g‘ri quyosh nurlari, solyariyga borish) saqlanish va quyoshga ochiq teri sohalariga har ikki soatda bir marta UVA + UVB50+ quyoshdan himoya vositalarini qo‘llash kerak.
4. Asosiy davolash kursidan keyin mahalliy vositalar bilan qo‘llab-quvvatlovchi terapiyani olish zarur.

Quyoshdan saqlovchi vositalarni qo‘llashda «choy qoshig‘i» usuli

«Choy qoshiq» usuli quyoshdan himoya vositasining talab qilinadigan miqdorini terining qoplanadigan sohasiga qarab aniqlash uchun mo‘ljallangan.

Asli nomi: The teaspoon rule of applying sunscreen.

Manba (rasmiy sayt yoki validasiya qilingan nashr):

Schneider J. The teaspoon rule of applying sunscreen. Arch Dermatol. 2002 Jun;138(6):838-9. doi: 10.1001/archderm.138.6.838-b. PMID: 12056975.

Tip (tagiga chizilsin):

- baholash shkalasi
- indeks
- so‘rovnoma
- boshqa (aniqlashtirilsin): Talab qilinadigan kerakli vosita miqdorini aniqlash usuli.

Mo‘ljallanishi: Qo‘llanadigan vositaning talab qilingan miqdorini aniqlash uchun.

Tarkibi (shablon):

Kalit (interpretasiya): SPF 2 mg/sm² (yoki og‘irligi 1 deb olinganda 2 mkl/sm²) qalinlikda qo‘llash orqali tekshiriladi. O‘rtacha katta odamning 1,73 m² teri yuzasini qoplash uchun taxminan 35 ml vosita talab etiladi.

«Kuyishni hisoblash uchun to‘qqizlik qoidasi»ga ko‘ra, tana umumiy yuzasiga nisbatan chap qo‘l, o‘ng qo‘l hamda bosh va bo‘yin sohasi har biri taxminan 9% ni tashkil qiladi. Tananing old qismi, orqa qismi, chap oyoq va o‘ng oyoq har biri taxminan 18% ni tashkil etadi (3 x 9% + 4 x 18% = 99%). Ushbu qoidani qo‘llaganda, 33 ml quyoshdan himoya vositasi taqsimlanadi: har bir qo‘lga va yuz hamda bo‘yinga taxminan 3 ml (choy qoshiqning yarmiga yaqin miqdor) va har bir oyoqqa, ko‘krak va orqaga taxminan 6 ml (choy qoshiqdan biroz ko‘proq) qo‘llaniladi.

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Giperpigmentasiyani olib borish bo‘yicha amaliy ko‘nikmalar

	Amaliy hamshira	**Oilaviy shifokor (bakalavr)**	**Tor mutaxassis**
Shikoyat va anamnez			
Bemordan shikoyatlarni yig‘ish maxoratini namoyishi	+*	+	+
Anamnez yig‘ayotganda giperpigmentasiyaning simptomlari haqida bilimlarni qo‘llay olish.		+	+
Teri tanosil kasalliklari haqida to‘liq anamnez		+	+
Fizikal ko‘rik			
• Terini vizual tekshirish. Izohlar: Terini vizual tekshirish paytida toshmalarning lokalizasiyasi va ularning xarakteri baholanadi.		+	+
Tashxis qo‘yish			

Tashxis qo‘yish spesifik simptomlar va laborator-instrumental tekshiruvlar asosida qo‘yiladi		+	+
Laborator instrumental diagnostika			
Asosiy laborator taxlillarni buyurish:			+
Qon umumiy klinik taxlili (rux, mis, temir, ferritin) o‘tkazish			+
Zaxm uchun skrining testlardan biri – MPR, RPR			+
Qonda qalqonsimon bez gormonlari darajalarini tekshirish			+
Qonda jinsiy gormonlar darajalarini tekshirish			+
Qon ivish vaqtini aniqlash			+
Qonda D-dimer darajasini aniqlash			+
Zarur hollarda boshqa kasalliklar bilan farqli tashxis (differensial diagnostika) o‘tkazish maqsadida biopsiya orqali olingan materialda patologo-anatomik tadqiqot o‘tkaziladi.			+
Qo‘rsatmalar bo‘yicha ichki a'zolar UTTsi			+
Fotohujjatlash			+
Teri holati kompyuter diagnostikasi			+
Diagnostikaning funksional usullari - meksometriya			+
Dermatoskopiya			
Vud lampasida ko‘rik			+
Davolash			
Nomedikomentoz davolash kompetensiyasi			+
Medikomentoz davolash kompetensiyasi			+

Profilaktika			
Aholi orasida to‘g‘ri hayot tarzi va tarbiya haqida tushuntirish ishlari olib borish	+	+	+
Medikomentoz davoga rioya qilish haqida ko‘rsatmalar	+	+	+

Asosiy tor mutaxassislar dermatovenerolog, tibbiy kosmetolog

Giperpigmentasiyani boshqarish bo‘yicha ko‘nikmalar

	Amaliy hamshira	Oilaviy shifokor (bakalavr)	Tor mutaxassis
Giperpigmentasiyalarni tasvirlash			+
Shikoyatlarning simptomatik tavsifi		+	+
Patofiziologik mexanizmlarning tavsifi			+
Etiologiya, simptomlar va tadqiqotlar (asosiy laboratoriya va instrumental tadqiqotlar) asosida giperpigmentasiya tashxisiga yondashuvni yaratish.			+
Asosiy taxlillar interpretasiyasi			+
Xronoqarish va fotoqarishni davolashga yondashuvni shakllantirish			+
Giperpigmentasiya uchun medikamentoz davolashni tasvirlab bering			+
Giperpigmentasiya uchun nomedikamentoz davolashini tasvirlab bering			+
Giperpigmentasiyani davolashda ishlatiladigan turli xil dorilarning ta'sir mexanizmi, ko‘rsatmalari va nojo‘ya ta'sirini muhokama qiling.		+	+
Davolash davomida giperpigmentasiya rivojlanishining patofiziologik mexanizmlarini muhokama qiling.			+

Asosiy tor mutaxassis shifokor-dermatovenerolog va tibbiy kosmetolog

