DERMATOMIOZIT BILAN OG‘RIGAN BEMORLARDA YURAK-QON TOMIR TIZIMI ZARARLANISHINING KLINIK-FUNKSIONAL XUSUSIYATLARI VA ERTA TASHXISLASH

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ANNOTATSIYA:

Ushbu maqolada dermatomiozit (DM) bilan og‘rigan bemorlarda yurak-qon tomir tizimi zararlanishining klinik-funksional xususiyatlari, subklinik yurak shikastlanishining diagnostik belgilari hamda uni erta aniqlash imkoniyatlari tahlil qilingan. Tadqiqotda 2011–2026-yillarda PubMed/MEDLINE, Scopus va Web of Science ma’lumotlar bazalarida e’lon qilingan kohort va kesma tadqiqotlar, tizimli sharhlar hamda meta-tahlillar ma’lumotlari umumlashtirildi. Elektrokardiografiya, 24 soatlik Holter monitoringi, transtorakal exokardiografiya, speckle-tracking exokardiografiya asosidagi global longitudinal strain (GLS), yurak magnit-rezonans tomografiyasi, shuningdek yuqori sezgirlikdagi troponin I va T hamda NT-proBNP biomarkyorlarining diagnostik ahamiyati qiyosiy baholandi. Natijalar DMda yurak zararlanishi ko‘pincha subklinik kechishini va uning aniqlanish chastotasi qo‘llanilgan diagnostik usulga bog‘liqligini ko‘rsatdi. Standart EKG va ExoKG yurak shikastlanishining dastlabki bosqichlarini aniqlashda cheklangan sezgirlikka ega bo‘lsa, GLS va yurak MRT miokardning yashirin funksional va strukturaviy o‘zgarishlarini aniqlashda yuqori diagnostik qiymatga ega. Yurakka xos hs-cTnI biomarkyori skelet mushaklari zararlanishi fonida soxta-musbat natijalarni kamaytirishda muhim ahamiyat kasb etadi. Tahlil asosida “biomarkyor → EKG/Holter → strain-ExoKG → yurak MRT” ketma-ketligidagi bosqichli diagnostik algoritm DMda yurak zararlanishini erta aniqlashning istiqbolli va resurs-samarali modeli sifatida taklif etildi. Ushbu algoritmning mahalliy populyatsiyada klinik validatsiyasi zarur.

KALIT SO‘ZLAR:

dermatomiozit, yurak-qon tomir tizimi, yurak zararlanishi, subklinik miokardit, miokardit, yurak yetishmovchiligi, elektrokardiografiya, Holter monitoringi, exokardiografiya, global longitudinal strain, yurak MRT, troponin I, hs-cTnI, NT-proBNP, erta tashxis.

Tadqiqot maqsad

Dermatomiozit (DM) bilan og‘rigan bemorlarda yurak-qon tomir tizimi zararlanishining klinik-funksional xususiyatlarini umumlashtirish hamda instrumental va laborator usullarga asoslangan bosqichli erta tashxis algoritmini asoslash.

Material va usulla

PubMed/MEDLINE, Scopus va Web of Science ma’lumotlar bazalarida 2011–2026 yillarda chop etilgan kogort, kesma tadqiqotlar, tizimli sharhlar va meta-tahlillar tahlil qilindi. Elektrokardiografiya (EKG) va 24 soatlik Holter monitorlash, transtorakal exokardiografiya (ExoKG) hamda speckle-tracking texnologiyasi asosida global longitudinal strain (GLS), yurak magnit-rezonans tomografiyasi (MRT) — kechki gadoliniy bilan kuchayish (LGE), T1/T2-mapping, hujayradan tashqari hajm ulushi (ECV), shuningdek yuqori sezgirlikdagi troponin I (hs-cTnI) va T (cTnT), NT-proBNP hamda miozit-spesifik antitanalar sezgirlik va spesifiklik ko‘rsatkichlari bo‘yicha qiyoslandi. Yurak zararlanishi 2019 yilgi konsensus va yangilangan Leyk-Luiz mezonlari asosida verifikatsiya qilindi.

Natijalar

DM da yurak zararlanishining asosiy shakllari miokardit, ritm va o‘tkazuvchanlik buzilishlari, perikardit hamda yurak yetishmovchiligi bo‘lib, uning chastotasi qo‘llanilgan usulga bog‘liq holda 9% dan 72% gacha o‘zgaradi. Daniya milliy kogortasida DM/polimiozitda 10 yillik yurak yetishmovchiligi xavfi 6,98% (nazorat 4,58%), atrial fibrillatsiya 10,17% (nazorat 7,07%), umumiy o‘lim 35,42% (nazorat 16,57%) ni tashkil etgan. EKG anomaliyalari bemorlarning 32,5% ida qayd etilgan, biroq subklinik miokarditda sezgirligi past. Otilish fraksiyasi saqlangan bemorlarda o‘rtacha GLS −17,9 ± 2,2% ni tashkil etib, me’yordan past bo‘lgan. Yurak MRT da LGE 62,3% bemorda, asosan lateral va inferior segmentlarda aniqlangan. Ko‘p modalli skriningda definitiv va ehtimoliy (peri)miokardit jami 24% bemorda topilgan; hs-cTnT < 2,3×ULN diagnozni istisno qilishda sezgirligi 88%, hs-cTnI ning chegara qiymatidan oshishi esa tasdiqlashda spesifikligi 100% bo‘lgan. Eng yuqori yurak zararlanishi anti-SRP musbat guruhda (≈50%) kuzatilgan.

Xulosalar

1. DM da yurak zararlanishi prognozni belgilovchi asosiy omillardan biri bo‘lib, ko‘p hollarda subklinik kechadi.
2. An’anaviy EKG va standart ExoKG erta bosqichda yetarli axborot bermaydi; speckle-tracking ExoKG (GLS) va yurak MRT sezilarli ustunlikka ega.

3. Birlamchi skriningda skelet mushaklari zararlanishida soxta-musbat natija beruvchi cTnT emas, yurakka spesifik hs-cTnI tavsiya etiladi.
4. "biomarkyor → EKG/Holter → strain-ExoKG → yurak MRT" ketma-ketligidagi bosqichli algoritm resurs-samarali erta tashxis modeli sifatida taklif etiladi va mahalliy populyatsiyada validatsiya qilinishi lozim.

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CLINICAL AND FUNCTIONAL CHARACTERISTICS OF CARDIOVASCULAR INVOLVEMENT AND EARLY DIAGNOSIS IN PATIENTS WITH DERMATOMYOSITIS

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ABSTRACT: This article analyzes the clinical and functional characteristics of cardiovascular involvement in patients with dermatomyositis (DM), the diagnostic features of subclinical cardiac injury, and the possibilities for its early detection. The study summarizes data from cohort and cross-sectional studies, systematic reviews, and meta-analyses published between 2011 and 2026 in the PubMed/MEDLINE, Scopus, and Web of Science databases. The diagnostic significance of electrocardiography, 24-hour Holter monitoring, transthoracic echocardiography, global longitudinal strain (GLS) assessed by speckle-tracking echocardiography, cardiac magnetic resonance imaging, as well as high-sensitivity cardiac troponin I and T and NT-proBNP biomarkers was comparatively evaluated. The results demonstrated that cardiac involvement in DM is frequently subclinical and that its detection rate depends on the diagnostic method used. Standard ECG and echocardiography have limited sensitivity for detecting early cardiac injury, whereas GLS and cardiac magnetic resonance imaging have higher diagnostic value for identifying latent functional

and structural myocardial abnormalities. Cardiac-specific hs-cTnI is particularly important for reducing false-positive results associated with skeletal muscle involvement. Based on the analysis, a stepwise diagnostic algorithm consisting of "biomarker → ECG/Holter → strain echocardiography → cardiac MRI" is proposed as a promising and resource-efficient model for the early detection of cardiac involvement in DM. Clinical validation of this algorithm in the local population is warranted.

Keywords: dermatomyositis, cardiovascular system, cardiac involvement, subclinical myocarditis, myocarditis, heart failure, electrocardiography, Holter monitoring, echocardiography, global longitudinal strain, cardiac MRI, troponin I, hs-cTnI, NT-proBNP, early diagnosis.

КЛИНИКО-ФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ ПОРАЖЕНИЯ СЕРДЕЧНО-СОСУДИСТОЙ СИСТЕМЫ И РАННЯЯ ДИАГНОСТИКА У ПАЦИЕНТОВ С ДЕРМАТОМИОЗИТОМ

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АННОТАЦИЯ: В статье проанализированы клинико-функциональные особенности поражения сердечно-сосудистой системы у пациентов с дерматомиозитом (ДМ), диагностические признаки субклинического поражения сердца и возможности его раннего выявления. Обобщены данные когортных и поперечных исследований, систематических обзоров и метаанализов, опубликованных в 2011–2026 годах в базах данных PubMed/MEDLINE, Scopus и Web of Science. Проведена сравнительная оценка диагностической значимости электрокардиографии, 24-часового холтеровского мониторирования, трансторакальной эхокардиографии, глобальной продольной деформации (global longitudinal strain, GLS), определяемой методом speckle-tracking эхокардиографии, магнитно-резонансной томографии сердца, а также высокочувствительных сердечных тропонинов I и T и биомаркера NT-proBNP. Результаты показали, что поражение сердца при ДМ часто протекает субклинически, а частота его выявления зависит от применяемого диагностического метода. Стандартные ЭКГ и эхокардиография имеют ограниченную чувствительность при выявлении раннего поражения сердца, тогда как GLS и МРТ сердца обладают более высокой диагностической ценностью для выявления скрытых функциональных и структурных изменений миокарда. Кардиоспецифический hs-cTnI имеет важное значение для снижения вероятности ложноположительных результатов, связанных с поражением скелетных мышц. На основании проведённого анализа предложен поэтапный диагностический алгоритм «биомаркер → ЭКГ/Холтер → strain-эхокардиография → МРТ сердца» как перспективная и ресурсосберегающая модель ранней диагностики поражения сердца при ДМ. Необходима клиническая валидация данного алгоритма в локальной популяции.

Ключевые слова: дерматомиозит, сердечно-сосудистая система, поражение сердца, субклинический миокардит, миокардит, сердечная недостаточность, электрокардиография, холтеровское мониторирование, эхокардиография, глобальная продольная деформация, МРТ сердца, тропонин I, hs-cTnI, NT-proBNP, ранняя диагностика.