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ТИББИЁТДА ЯНГИ КУН НОВЫЙ ДЕНЬ В МЕДИЦИНЕ NEW DAY IN MEDICINE

*Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
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STUDY OF TORCH PROFILE IN PATIENTS WITH VITILIGO TO EVALUATE SEROLOGICAL TEST RESULT IMPORTANCE

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✓ Resume

In Bukhara, chronic skin-disordered patients specially belonging to the lower socioeconomic groups may be exposed to various infections that are transmissible through close contact at different stages of their life. Infections with agents of the TORCH complex in patient can have nonspecific immunological outcomes and lead to serious consequences to the developing chronic disorders. However, screening for TORCH infection in Uzbekistan is inadequate. Therefore, this study was conducted to know the seroprevalence of TORCH infections among vitiligo patient attending Republic Dermatology and cosmetology scientific-practical center, Bukhara. This study revealed that the seroprevalence of TORCH infections were significant among the chronic skin diseases like vitiligo residing in Bukhara and its neighbouring Districts. Additionally, it was also deduced that the positivity of serological result may be considered for routine screening of TORCH complex in order to avoid adverse chronic immune mediated disorders.

Key words: Vitiligo, humoral immunity, TORCH infection

VITILIGO BEMORLARDA TORCH-QO'ZG'ATUVCHILARI DIAGNOSTIKASIDA SEROLOGIK TEKSHIRUVLARNING MOHIYATI

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✓ Resume

Buxoro viloyatida surunkali teri kasalliklari bo'lgan bemorlarda, ayniqsa ijtimoiy-iqtisodiy yashash sharoiti past guruhlarda maishiy-muloqot yoki jinsiy yo'l orqali yuqadigan turli infeksiyalar uchrashi mumkin. Bu belgilarisiz infeksiyalarning asosiy guruhi TORCH qo'zg'atuvchilariga tegishli bo'lib, surunkali o'ziga xos o'zgarishlar bilan kechuvchi immunologik jarayonlarga olib kelishi va surunkali kasalliklarning rivojlanishiga turtki bo'lishi mumkin. Shu bilan bir qatorda O'zbekistonda TORCH qo'zg'atuvchilar uchun skrining tashxisot o'tkazish etarli darajada emas. Shuning uchun bu tadqiqot Respublika dermatologiya va kosmetologiya ilmiy-amaliy markazi Buxoro filialida davo muolajalarini oluvchi bir necha vitiligo bemorlar orasida TORCH infeksiyasining serologik musbatligini bilish maqsadida o'tkazildi. Bu tadqiqot shuni ko'rsatdiki, TORCH infeksiyalari seromusbatligi Buxoro shahar va unga qo'shni tumanlarda yashovchi surunkali teri kasalliklari, masalan vitiligo orasida muhim ahamiyatga ega. Bundan tashqari, serologik natijaning ijobiyligi surunkali immun vositachilikdagi olib kelishi mumkin bo'lgan kasallikdagi davo effektini pasaytirishi va yangi o'choqlarni yuzaga kelishida etakchi omil bo'lishi mumkinligi o'rganib borildi.

Kalit so'zlar: Vitiligo, to'qima immuniteti, TORCH qo'zg'atuvchi

Relevance

TORCH complex is a group of viral, bacterial and protozoan agents that can infect humans at any stage of daily life (newborn, children and adult) and reach through contact with probability of causing serious impact on the developing of disorders. [1]. Haematogenous transmission can occur at any time during gestation or occasionally at the time of delivery via maternal-to-fetal transmission or through parenteral interruptions. These pathogens usually cause only asymptomatic or mild infections in

human, but can cause much more serious consequences in women to the developing foetus. Vitiligo implies previous unfavourable fetal outcome in terms of two or more consecutive spontaneous abortions, history of intrauterine fetal death, intrauterine growth retardation, stillbirth, early neonatal death, and/or congenital anomalies [2]. The clinical manifestations of neonatal infections vary depending on the causative agent and gestational age at the time of exposure. TORCH is an acronym representing infection caused by Candidiasis, Rubella, Cytomegalovirus and Herpes simplex virus. Candidiasis is a parasitic infectious disease caused by a protozoa *Candidiasis gondii*, which is transmitted to the fetus through the infected mother's placenta, and may cause miscarriage or serious congenital defects [3]. Rubella is an RNA virus of paramyxovirus group which invades the placenta and fetus during gestation. Approximately 30%–50% fetuses of women contacting Rubella during the first 3 months of pregnancy will suffer adverse effects which could lead to childbirth with serious congenital defects such as deafness, blindness or it may cause Congenital Rubella Syndrome (CRS) [4]. Cytomegalovirus is a leading cause of congenital infections and long-term neuro developmental disabilities among children [5]. Fetal damage is more likely to be severe when maternal infection with CMV occurs early in pregnancy. Herpes simplex virus (HSV) is a DNA virus of the same group as CMV. Infection in neonates is commonly acquired by contact with the mother's infected birth canal during labour. Neonatal HSV infection is usually acquired at birth, although a few infants have had findings suggestive of intrauterine infection [6]. Not only women but also asymptomatic patients live with us together which carry on infections for long time. These infections can manifest at any time of life that can lead to provoke for progression of chronic different kind of diseases specially skin disorders. We aim to correlate associations of TORCH complex and vitiligo diseases in patients. Since these infections are initially inapparent and asymptomatic and difficult to diagnose clinically, therefore the diagnosis of these infections mostly depends on serological evidences. Due to the lack of proper screening programme in Uzbekistan, there is no available baseline serological data regarding the presence of an antibody or the seroprevalence of TORCH infections in vitiligo. In this context, this study aims to investigate the seroprevalence of TORCH infections in adult with vitiligo which will help to impact the care and management of such patients.

Materials and methods

The study was a hospital based case-control study, to assess the seroprevalence of TORCH infections among vitiligo patients as case (group-I) and without vitiligo as control (group-II). The investigation was made from 20th september 2022 to 1st August 2024. The samples were collected from vitiligo patients attending polyclinic of Republic Dermatology and cosmetology scientific-practical center, Bukhara. Sample Size and Study Procedure: A total of 225 16 to 60 aged women were included in the study. Among these 150 serum samples from women with positive result to TORCH complex one of them, as case and 75 samples were taken from normal healthy women without control. Socio demographic data were obtained at the sampling site from the study with a pre-designed structured questionnaire. The patients were well informed and a written consent was obtained at the time of sample collection. Sample size was calculated as: where, n_1 = Number of cases n_2 = Number of Controls $Z_{\alpha/2}$ = Standard normal deviate for two-tailed test on alpha level (relates to the confidence interval level). Z_{β} = Standard normal deviate for one tailed test based on beta level (relates to the power level). r = Ratio of controls to case. p_1 = Proportion of cases with exposure and $q_1 = 1 - p_1$ p_2 = Proportion of controls with exposure and $q_2 = 1 - p_2$ Detection of IgM and IgG antibodies: All the samples were tested by Immunoglobulin M (IgM) and Immunoglobulin G (IgG) antibody capture enzyme linked immunosorbent assay (ELISA) test according to manufacturer's instruction. Statistical analysis: The collected data were analyzed with GraphPad Prism software version 7.01. Chi square tests were performed to find out the relations between different variables. Statistical significance was considered at 95% confidence interval where $P \leq 0.05$.

Results and discussions

In this study, all the 225 patients were categorized into three age groups i.e. 16-24 ears, 25-35 ears and 35-60 ears respectively (Fig.-1). Among 150 cases (Table-1), 79 (52.7%) were found patients aged 16-24 ears followed by 46 (30.6%) in 35-60 ears and 25 (16.6%) in 25-35 ears. The characters of TORCH complex in vitiligo was found to be highest (31.3% positive in result) and lowest in healthy patients (6% positive in result).

It was also analyzed statistically and found to be significant at chi-square value 13.63 and p value 0.0002. Hassani et al (2015) reported similar findings for Table 2 Distribution of TORCH characters in various age groups Types of TORCH CASE (150) Total(n=150) Different age groups 19-24yr 25-30yr 35-60yr

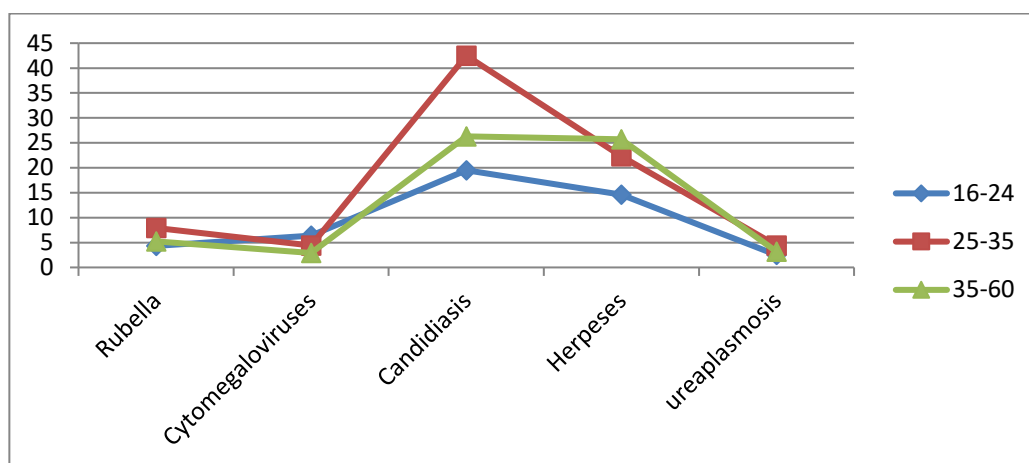
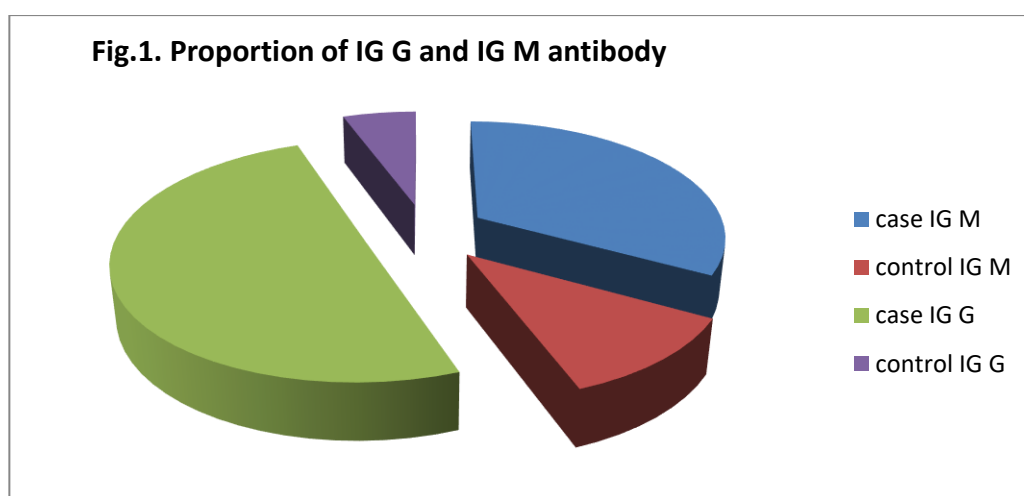


Table 1 Overall Seropositivity of IgG antibodies among the Case and control groups TORCH agents Seroprevalence of TORCH IgG Odd ratio Chi-square.

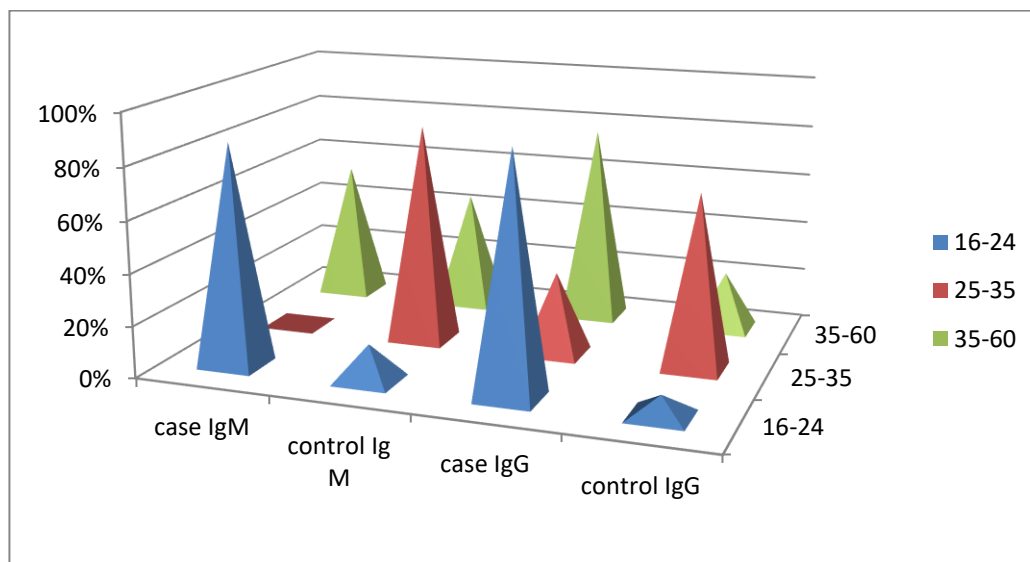
Detection of IgM and IgG antibodies Overall seroprevalence of TORCH IgM was found to be 53(35.3%) in case and 9(12%) in controls (Table 1), (Fig.1).



Overall seroprevalence of TORCH IgM among all the women TORCH with 27.02% in case and 14.28% in controls [7]. In Case, seroprevalence of IgM antibodies of TORCH agents was highest in 14% and lowest in rubella 2.6% (Fig.3). In control, highest prevalence 8% was seen in Candidiasis and lowest in rubella 0%. Seroprevalence of Candidiasis among women The overall seroprevalence (IgM and IgG) of Candidiasis in women was also investigated and found to be 69(46%) in case and 17(22.6%) in controls (Table-3). It was also statistically significant with chi-square value 11.5286 and p value 0.000685[odd ratio-2.906, 95% CI- 1.549(L) and 5.4501(U)]. The seropositivity for IgM antibodies was 21 (14%) in case and 6 (8%) in controls and similarly 48 (32%) and 11(14.6%) was detected for IgG antibodies in caseand controls respectively. Candidiasis IgG was found to be statistically significant with chi-square value 7.76 and p= 0.005. Additionally, Candidiasis IgM and IgG was found to be highest in 31-35 age groups and lowest in 19-24 age groups (Fig.-3).

Simpore et al (2006) also reported an increased prevalence rate of 16.3%, 18.4%, 27.6% and 49.1% for 18-24, 25-29, 30-34 and 35-45 ears of age respectively among the women in Africa[9]. Mittal et al (2011) also suggested that the seropositivity of Candidiasis increases with age. According to their study,

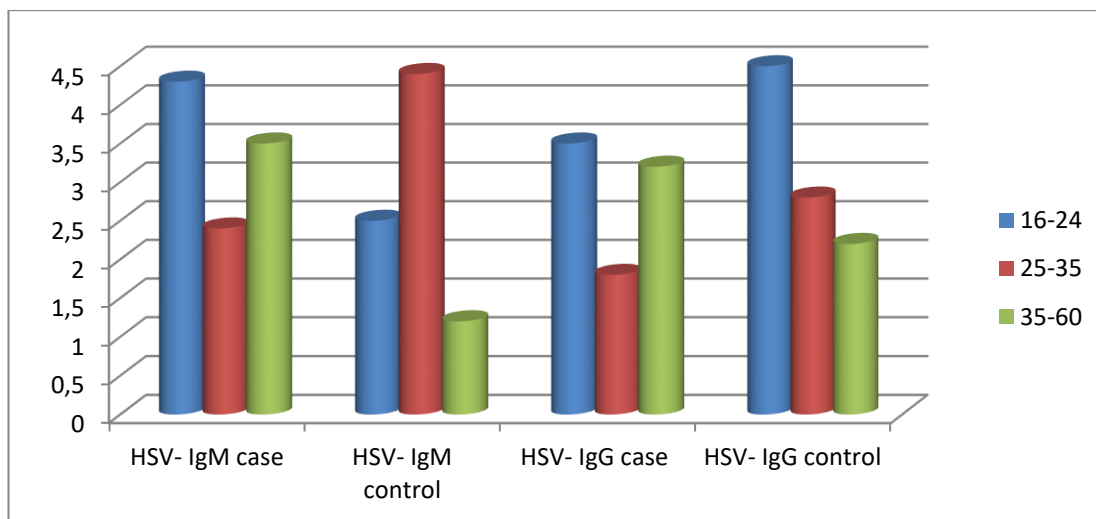
antibody acquisition increased with the increase in age; and the maximum prevalence was observed among women aged 36 ears and above [10]. Borkakoty et al (2016) have also found that the higher prevalence of infection due to *T. gondii* was associated with increase in age [11]. Among the vitiligo Characters both the Candidiasis IgM and IgG prevalence were highest in miscarriage or spontaneous abortion (19% and 38%) and lowest in congenital anomalies 0(0%) (Fig.-6).



Seroprevalence of Rubella virus among women The seroprevalence of Rubella was found to be 4 (2.6%) and 0 (0%) for IgM antibodies along with 129 (86%) and 51(68%) for IgG antibodies in both case and controls respectively (Table -4). Table 4 Seroprevalence of Rubella IgM and IgG antibodies among the study group and Controls. Rubella Antibody Case (n=150) Control (n=75) Odd ratio Chi-square value P Value Positive Negative Positive Negative Rubella-IgM 4(2.6%) 146(97.3%) 0(0%) 75(100%) 4.6382 - 0.3055 Rubella-IgG 129(86%) 21(14%) 51(68%) 24(32%) 2.8908 10.125 0.0014 The overall seroprevalence of rubella IgM and IgG was found to be statistically significant with chi-square value 14.330 and p= 0.0003

Seroprevalence of Cytomegalovirus (CMV) Among Women The seroprevalence for CMV IgM and IgG antibodies was found to be 17 (11.3%) and 2 (2.66%) for IgM and 134 (89.3%) and 47 (62.6%) for IgG antibodies. The overall seroprevalence of CMV IgM and IgG together was found to be statistically significant with p= 0.00004 [odd ratio 162.21, 95%CI-9.705(L) and 2711.1(U)]. In case, the highest prevalence 3(12%) and 23(92%) was found in 31-35 age groups and lowest 5(10.8%) and 39 (84.7%) in 19-24 age groups for IgM and IgG respectively. In controls, the highest prevalence 1(6.25%) in 31-35 age group and 15(68.15%) in 19-24 age group for IgM and IgG respectively. Similarly Munro et al (2005) recorded a higher prevalence rate of CMV IgG in upper age group [20]. Statistical association between age groups and CMV IgM and IgG antibodies were analyzed separately but none was found to be significant.

Seroprevalence of Herpes Simplex Virus (HSV) among women The seroprevalence for HSV IgM and IgG antibodies was found to be 11 (7.33%) and 1 (1.3%) in case as well as 96 (64%) and 42(56%) in controls respectively (Table-4). Table 4



Seroprevalence of HSV IgM and IgG antibodies among the Case and Controls Herpes simplex virus Antibody Case (n=150) Positive Negative Positive Negative Control (n=75) Odd ratio Chi-square P - Value Statistically it was found significant with $p=0.035$ and chi square value 4.41[odd ratio-1.851, 95% CI- 1.038(L) and 3.302(U)]. In an epidemiological study of anti-HSV, IgM antibodies among the women attending the antenatal clinic were reported to be 29.3% in Brazil, 23.8% in Estonia, 7.9% India, 12.9% in Morocco and 8.3% in Srilanka [22]. In case, the highest prevalence 2(8%) was found in 31-35 age groups for IgM and 56 (70.8%) in 25-30 age groups for IgG. In controls the highest prevalence 1(6.25%) in 31-35 age group for IgM and 26(70.2%) in 25-30 age group for IgG antibodies.

Statistical association between age groups and Candidiasis IgM and IgG was seen separately but none was found to be significant. Similarly Haider et al (2011) reported 68 anti-HSV IgM seropositive among women and maximum seroprevalence 35 (51.4%) was from 30-40 ears age group [23]. Among the vitiligo cases the both HSV IgM and IgG were highest 4(8.51%) and 37(78.7%) in miscarriage; lowest in congenital anomalies 1(11.1%) and 0(0%) with no statistical significance. Biswas et al (2011) also observed a positive association among the women with and without genital lesion and vaginal discharge.

Conclusion

The epidemiology of TORCH infections is an important aspect in the development of various strategies for the prevention of infections among women. This study suggests that the antenatal cases with vitiligo may be considered for routine screening of TORCH complex to avoid adverse fetal outcomes and obstetric complications. Currently TORCH screening is being performed only among women presenting with abnormal pregnancies or vitiligo. It is rather difficult to identify the at risk women and it is also time consuming to elicit the risk factors for all relevant infections. Preserving stringent practices in health and hygiene may prevent the vicious cycle of Candidiasis transmission. Incorporation of rubella immunization may be considered in the national immunization schedule for better immunological protection for the women. Awareness about the high prevalence of CMV infections in women needs to be inculcated among the reproductive age group women. Necessary preventive measures need to be taken during treatment time of vitiligo to the spread of TORCH infections. Health education and counselling may have tremendous impact on the preventive strategies and treatment of these infections. Additionally, the novel diagnostic procedures like PCR, DNA recombinant technology and isolation of virus from the sample will be more useful in the future. Healthcare workers should do awareness campaigns regarding these diseases in the population especially in the women regularly. Hence, new approaches for the prevention and treatment of TORCH infections are necessary, including antiviral interventions and the development of a vaccine strategy.

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Conflicts of interest. We have no conflict of interest to declare.

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LIST OF REFERENCES

1. Пассерон Т. Первый шаг в новую эру лечения пациентов с витилиго. Ланцет (2020) 396:74–5. 10.1016/S0140-6736(20)30747-9
2. Ву Д., Ши Д., Чжу С. Связь между полиморфизмом фактора некроза опухоли- α -308 G/A и риском развития витилиго: метаанализ // Международный журнал дерматологии. 2015. Том. 54 (9): П. 1045–1053.
3. аль-Харти Ф., Зуман А., Арфин М., Тарик М. и др. Генетические полиморфизмы факторов некроза опухоли- α и β как фактор риска у саудовских пациентов с витилиго // Генетика и молекулярные исследования. 2013. Том. 12(3). П. 2196-2204.
4. Чаатов Б.Т., Каримов Х.Я., Арифов С.С. и др. исследование связи полиморфизма 308 G/A гена TNF- α с риском развития витилиго // Дерматовенерология и эстетическая медицина. 2016. № 2. С. 75–82.
5. Бонифатсий К., Пассерон Т., Сенешаль Джанд Тулик МК (2021 г.) Иммуитет в борьбе с кожным стрессом: взгляд на витилиго. Иммунол. 12:613056. doi: 10.3389/fimmu.2021.613056
6. Клинико-Диагностическая Характеристика Болезни Генерализованный Витилиго С Хроническими Заболеваниями Р.Э. Бахшиллова - Central Asian Journal of Medical and Natural Science, 2023. 355-359.

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