



# Diyabetik Ayak İnfeksiyonunda Tedavide Gecikme Neden?

Hastaya Bağlı Nedenler

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Hastalıkları ve Klinik Mikrobiyoloji AD, Sivas



## Sunu planı

- ✓ Genel bilgi
- ✓ Hastaya baęlı  
gecikme nedenleri
- ✓ Konuyla ilgili  
literatürler
- ✓ Sonuç ve öneriler

# GİRİŞ



- ✓ DA sorunları diyabetin eğitimle önlenabilir tek komplikasyonu
- ✓ DAI'da erken müdahale hayat kurtarıcı olabilmekte
- ✓ Hastaların tedavi almalarındaki gecikmelerin çeşitli sebebi var
- ✓ Hastaya bağlı olan, bazıları önlenebilecek nedenler

## HASTAYA BAĞLI GECİKME NEDENLERİ



- ✓ Hastaların %60'ında periferik nöropati var
- ✓ Ağrı duyusundaki azalma/kayıp
- ✓ Vasküler sistemdeki patoloji ve iskemi nedeniyle inflamasyon bulguları silik
- ✓ Görme problemleri, lezyonlar geç fark edilebilir

## Hastaya bağı tedavi gecikme nedenleri

UDAİS 2016, İstanbul



- ✓ Geçirilmiş  
ampütasyonlar ve  
hareket kısıtlılığı  
hastaneye geç  
başvurmalarına sebep  
olabilir



## Hastaya bağı tedavi gecikme nedenleri

- ✓ İleri yaşta olma,
- ✓ Kendi bakımlarını yapabilmelerindeki kısıtlılık
- ✓ Multidisipliner yaklaşım gerektiğinden doktor doktor gezeceğim düşüncesi



## Uyumsuz hasta davranışları

- ✓ Temizlik kurallarına ve ayak bakımına uymama
- ✓ Aşırı kilo alınması, kan şekeri kontrolünün olmaması
- ✓ Önemsememek, ciddiyetin farkında olmama
- ✓ Geçer diye düşünme hastaların doğru zamanda hekime ulaşmalarını ve etkin tedaviyi almalarını zorlaştırabilmekte





## Hastaya bağlı tedavi gecikme nedenleri

- ✓ Hastanın sosyal çevresi
- ✓ Mesleği
- ✓ Eğitim düzeyi
- ✓ Kognitif ve ekonomik durumu hastanın hastaneye başvurma ve tedavi arama süresi üzerinde oldukça belirleyici



## Hastaya bağı tedavi gecikme nedenleri

UDAİS 2016, İstanbul



- ✓ Sosyoekonomik düzeyi düşük olanlarda;
- ✓ Sağlık sigortaları daha az olabilir
- ✓ Eğitim düzeyleri düşük olabilir
- ✓ Hastalığının sonuçları hakkında bilgilerinin az olması yada yeterince önemsememesi gibi sekonder sonuçları beraberinde getirmekte



## Research: Care Delivery

### Pre-hospital delay in patients with diabetic foot problems: influencing factors and subsequent quality of care

J. Yan, Y. Liu, B. Zhou and M. Sun

Department of Endocrinology, The First Affiliated Hospital of Chongqing Medical University, Chongqing, China

Accepted 12 December 2013

#### Abstract

**Aims** To assess pre-hospital patient delay and its associated variables in patients with diabetic foot problems.

**Methods** We classified 270 patients with diabetic foot problems retrospectively based on the distribution of pre-hospital delay. Clinical, demographic and socio-economic data were collected. Logistic regression analysis was performed to examine independent associations with patient delay.

**Results** The median pre-hospital delay time was 46.49 days. Patients reported short ( $\leq 1$  week; 77 patients, 28.5%), moderate ( $> 1$  week and  $\leq 1$  month; 106 patients, 39.3%) and long delays ( $> 1$  month; 87 patients, 32.2%). In a univariate analysis, nine variables were associated with a longer delay ( $P < 0.05$ ): (1) no previous ulcer; (2) no health insurance; (3) poor housing conditions; (4) low income level; (5) low educational level; (6) infrequent foot inspection; (7) few follow-up medical visits; (8) absence of diabetic foot education; (9) lack of knowledge of foot lesion warning signals. A multivariate analysis showed that absence of diabetic foot education (odds ratio 2.70, 95% CI 1.03–7.06,  $P = 0.043$ ) and lack of knowledge of foot lesion warning signals (odds ratio 2.14, 95% CI 1.16–3.94,  $P = 0.015$ ) were independent predictors of long patient delay. Long delay increased the risk of amputation (odds ratio 2.22, 95% CI 1.36–3.64,  $P = 0.002$ ) and mortality (odds ratio 2.69, 95% CI 1.35–5.33,  $P = 0.005$ ).

**Conclusions** A number of factors were involved in pre-hospital delay among patients with diabetic foot problems and contributed to poor outcomes. We recommend developing a community intervention programme that targets at-risk communities to encourage earlier multidisciplinary team assessment to reduce disparities and improve foot outcomes in patients with diabetes.

Diabet. Med. 31, 624–629 (2014)

- ✓ Yan ve ark. 5 yıllık süreyi kapsayan dönemde yaptıkları çalışmada;
- ✓ DAI olan hastaların %39.3'ünün 1 hafta-1 ay
- ✓ %32.2'sinin ortalama  $\geq 1$  ay süre olmak üzere hastaneye geç başvurduğunu saptamışlar



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✓ Uzun süreli  
gecikmenin özellikle  
9 farklı neden ile  
ilişkili olduğu  
belirtmişler



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- ✓ Hastada daha önceden ayak ülserinin olmaması
- ✓ Sağlık sigortasının olmaması
- ✓ Evdeki kötü ev yaşam koşulları
- ✓ Düşük gelir düzeyi
- ✓ Düşük eğitim düzeyi



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- ✓ Seyrek yapılan ayak muayenesi
- ✓ Medikal ziyaretlerin az olması
- ✓ DA eğitiminin olmaması
- ✓ Ayak lezyonlarının uyarı sinyalleri konusundaki bilgi eksikliği



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- ✓ DA eğitiminin olmayışı 2.7 kat,
- ✓ Ayak lezyonlarında uyarıcı/tehlike sinyaller konusunda bilgi sahibi olmama 2.1 kat uzun süreli gecikmedeki bağımsız risk faktörleri
- ✓  $>1$  ay gecikmede amputasyon riski 2.2 kat, ölüm riski 2.6 kat artmakta





Original Research

## Racial difference in diabetes preventive care

Jia Pu, M.A.<sup>\*</sup>, Betty Chewning, Ph.D.

*School of Pharmacy, University of Wisconsin–Madison, Wisconsin, United States*

### Abstract

**Background:** Diabetes has long been a leading cause of death in the United States, and worldwide. Diabetes-related preventive services are recommended to delay or to avoid diabetes complications. Racial disparity in the receipt of diabetes preventive care is well documented; however, little is known about the contributors to this disparity.

**Objective:** This study aims to explore potential mediators linking race/ethnic disparities to reduced receipt of preventive care, and to better understand the dynamics underlying the relationships between race/ethnic characteristics and preventive care. Implications for pharmacist roles are explored.

**Methods:** This study used 2008 Medical Expenditure Panel Survey (MEPS) data. The outcome of diabetes preventive care was assessed by participants' self-reports in MEPS. Household income and health insurance coverage were identified as potential mediators based on Andersen's Health Care Utilization Behavior model. Logistic regression was used to examine the direct effects of study independent variables on diabetes preventive care. Path analysis was conducted to identify racial disparities' direct and indirect effects on diabetes preventive care via potential mediators. All estimates were weighted to the U.S. non-institutionalized population.

**Results:** Racial differences occurred with respect to receiving A1C tests, diabetic foot exams, and eye exams. After controlling for patient age, gender, living area, income, and health insurance status, racial differences persisted in diabetes preventive care. Hispanics were the least likely to receive all three elements of diabetes preventive care. In addition, patients were less likely to receive diabetes preventive care who were younger, lived in rural areas, had lower family income and were uninsured. A lower rate of diabetes preventive care in minority patients was partially explained by their higher rate of being uninsured or having low family income.

**Conclusion:** The results suggest that minority, rural, low-income, uninsured, and young diabetes patients are at a higher risk of not receiving diabetes preventive care. This study is unique in its use of path analysis to assess racial disparities in diabetes preventive care and to do so drawing on Andersen's Health Care Utilization Behavior model. In response to the disparity findings which were reinforced in this study, pharmacists have a need and an opportunity to help identify and address important gaps in diabetes preventive care through diabetes patient assessment, education, referral, and monitoring.

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**Keywords:** Racial difference; Diabetes preventive care; Andersen's Health Care Utilization Behavior model



- ✓ Pu ve ark. çalışması;
- ✓ İspanyol ırkı, beyaz ve Afrikan Amerikalılar
- ✓ Diyabetik hastalarda göz muayenesi, DA muayenesi gibi koruyucu bakım hizmetlerini almada ırklar arasında farklılık var





Original Research

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- ✓ İspanyol ırkındakiler beyaz ve Afrikan Amerikalılara kıyasla daha az oranda koruyucu bakım hizmeti almakta
- ✓ İspanyolların, araştırmadaki diğer ırklara göre sigortasız olma oranları daha fazla



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- ✓ Genç hastalar,
  - ✓ Kırsal bölgede yaşayanlar,
  - ✓ Düşük aile geliri olanlar,
  - ✓ Sigortasız olan hastalar
- diğer hastalara kıyasla daha az oranda koruyucu/önleyici bakım almakta

## The Diabetic Person Beyond a Foot Ulcer

### Healing, Recurrence, and Depressive Symptoms

Matteo Monami, MD, PhD\*  
 Rosella Longo, MD\*  
 Carla Maria Desideri, MD\*  
 Giulio Masotti, MD\*  
 Niccolò Marchionni, MD\*  
 Edoardo Mannucci, MD\*

**Background:** Several studies have shown a significant relationship between depressive symptoms and wound healing, but these studies have not assessed the effects of depressive symptoms on diabetic foot prognosis. We specifically designed our study to assess the role of depressive symptoms in healing and recurrence of diabetic foot ulcers.

**Methods:** A consecutive series of 80 type 2 diabetic patients aged 60 years and older with foot ulcers was enrolled in a cohort observational study with a 6-month follow-up. Patients who healed within 6 months of enrollment were included in a 12-month follow-up study for assessment of ulcer recurrence. Depressive symptoms were assessed with the geriatric depression scale.

**Results:** Healing was associated with a smaller ulcer area, shorter delay between ulcer onset and treatment, lower glycosylated hemoglobin, and higher ankle-brachial index. Both smoking status and Texas and Wagner scores also had a significant impact on healing. Patients who healed had significantly lower scores on the geriatric depression scale, and those with scores  $\geq 10$  had a significantly higher risk of not healing at 6 months (relative risk, 3.57; 95% confidence interval, 1.05–12.2). Patients with a recurrent ulcer (59.3%) showed significantly higher total cholesterol levels, higher scores on the Greenfield index of disease severity and geriatric depression scale, and a higher prevalence of cerebrovascular disease. Depressive symptoms maintained a significant association with persistence and recurrence of ulcer even after adjustment for confounders.

**Conclusions:** Depressive symptoms are associated with impaired healing and recurrence of ulcers in elderly type 2 diabetic patients. (J Am Podiatr Med Assoc 98(2): 130-136, 2008)

Predictors of negative outcome of diabetic foot ulcers include peripheral artery disease<sup>1</sup>; wound size, duration, and grade<sup>2</sup>; and low serum albumin.<sup>3</sup> Depressive symptoms have been reported to be associated with increased mortality in the general population and with increased morbidity and mortality in cardiovascular diseases such as stroke<sup>4</sup> as well as in malignancies and other conditions.

Diabetic foot ulcers are associated with impairment of quality of life and depressed mood,<sup>5,6</sup> particularly when healing does not occur after prolonged

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treatment.<sup>8</sup> Although several experimental<sup>9,10</sup> and clinical studies<sup>11-14</sup> have shown a significant relationship between psychological factors and wound healing, they have not assessed the effects of depressive symptoms on diabetic foot healing.

#### Materials and Methods

A prospective cohort study, with a 6-month follow-up, was conducted on a consecutive series of 80 type 2 diabetic patients 60 years and older with chronic foot ulcers (duration > 3 months) who were free of major cognitive impairment (Mini-Mental State Examination score > 18)<sup>15</sup> and had provided written, informed consent. Table 1 summarizes the characteristics of the subjects enrolled. All patients referred to



## Depresyon

- ✓ Depresif semptomlar yaşlı tip 2 diyabetik hastada tekrarlayan ülserler ve ülserlerin iyileşmesindeki bozulma ile ilişkili
- ✓ Depresif ruh hali tedavideki gecikme ile de ilişkili olabilmekte





UD AIS 2016, İstanbul

- ✓ Hastalığın kronik doğasından kaynaklanan depresif semptomlar;
- ✓ Hastalığı reddetme
- ✓ Ampütasyon korkusu
- ✓ Yalnızlık
- ✓ Hastaların tedaviyi arama ve hastaneye başvurmalarını engelleyebilmekte



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Diabetes  
Federation

## Patient and professional delay in the referral trajectory of patients with diabetic foot ulcers<sup>☆</sup>

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Diabetic foot

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### ABSTRACT

**Aims:** A cohort study investigated referral and treatment trajectories of patients with diabetic foot ulceration consulting podiatrists. The study aims were to quantify patient, professional and treatment (=total) delay and to identify relationships between patient- or professional-related characteristics, delays or ulcer healing time.

**Methods:** Ten podiatrists specialising in diabetes care included 54 consecutive adults with diabetic foot ulceration. Assessments were performed retrospectively (e.g. delays) and prospectively (12 weeks).

**Results:** Median (SD; range) patient delay was 3.0 days (50.6; 0–243), professional delay 7.0 days (63.4; 0–279) and treatment delay 20.5 days (97.3; 0–522). 57% of patients took >2 weeks before visiting a podiatrist. Ulcers healed in 67% of patients in 49.0 days (90.2; 4–408). The number of health care professionals in the referral trajectory was positively related to treatment delay ( $p < 0.01$ ) and to ulcer healing time ( $p < 0.01$ ). Professional delay and treatment delay was positively correlated with the duration of the podiatric treatment ( $p < 0.05$ ). Patient awareness of ulceration risk tended to decrease the healing time.

**Conclusions:** Patients with diabetic foot ulcers presented small median delays in the referral trajectory to podiatrists specialising in diabetes. The study results suggest that reducing the number of health care professionals in the referral trajectory might decrease treatment delay and ulcer healing time. Also improving patient awareness of ulceration risk might be beneficial for the healing time.



✓ Sanders ve ark., ≥18

yaş

✓ Hastaların %20'sinde,

>2 hafta gecikme var

✓ Koruyucu duyu kaybı

yardım istemeye karar

sürecinde gecikmenin

önemli bir nedeni



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Federation

## Patient and professional delay in the referral trajectory of patients with diabetic foot ulcers<sup>☆</sup>

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### ABSTRACT

**Aims:** A cohort study investigated referral and treatment trajectories of patients with diabetic foot ulceration consulting podiatrists. The study aims were to quantify patient, professional and treatment (=total) delay and to identify relationships between patient- or professional-related characteristics, delays or ulcer healing time.

**Methods:** Ten podiatrists specialising in diabetes care included 54 consecutive adults with diabetic foot ulceration. Assessments were performed retrospectively (e.g. delays) and prospectively (12 weeks).

**Results:** Median (SD; range) patient delay was 3.0 days (50.6; 0–243), professional delay 7.0 days (63.4; 0–279) and treatment delay 20.5 days (97.3; 0–522). 57% of patients took >2 weeks before visiting a podiatrist. Ulcers healed in 67% of patients in 49.0 days (90.2; 4–408). The number of health care professionals in the referral trajectory was positively related to treatment delay ( $p < 0.01$ ) and to ulcer healing time ( $p < 0.01$ ). Professional delay and treatment delay was positively correlated with the duration of the podiatric treatment ( $p < 0.05$ ). Patient awareness of ulceration risk tended to decrease the healing time.

**Conclusions:** Patients with diabetic foot ulcers presented small median delays in the referral trajectory to podiatrists specialising in diabetes. The study results suggest that reducing the number of health care professionals in the referral trajectory might decrease treatment delay and ulcer healing time. Also improving patient awareness of ulceration risk might be beneficial for the healing time.



✓ Ülserasyon riski ve hastaneye erken başvuru konusunda hasta bilincini artırmak iyileşme süresinde yararlı

# Adverse events in diabetic foot infections: a case control study comparing early versus delayed medical treatment after home remedies

This article was published in the following Dove Press journal:  
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**Background:** The aim of conventional medical therapy in diabetic foot infections is to control infection, thereby reducing amputation rates, infectious morbidity, and death. Any delay incurred during a trial of home remedies could allow an infection to progress unchecked, increasing the risk of these adverse outcomes. This study sought to determine the effects of delayed operative interventions and amputations in these patients.

**Methods:** A questionnaire study targeting all consecutive patients admitted with diabetic foot infection was carried out over 1 year. Two groups were defined, ie, a medical therapy group comprising patients who sought medical attention after detecting their infection and a home remedy group comprising those who voluntarily chose to delay medical therapy in favor of home remedies. The patients were followed throughout their hospital admissions. We recorded the duration of hospitalization and number of operative debridements and amputations performed.

**Results:** There were 695 patients with diabetic foot infections, comprising 382 in the medical therapy group and 313 in the home remedy group. Many were previously hospitalized for foot infections in the medical therapy (78%) and home remedy (74.8%) groups. The trial of home remedies lasted for a mean duration of 8.9 days. The home remedy group had a longer duration of hospitalization (16.3 versus 8.5 days;  $P<0.001$ ), more operative debridements (99.7% versus 94.5%;  $P<0.001$ ), and more debridements per patient (2.85 versus 2.45;  $P<0.001$ ). Additionally, in the home remedy group, there was an estimated increase in expenditure of US \$10,821.72 US per patient and a trend toward more major amputations (9.3% versus 5.2%;  $P=0.073$ ).

**Conclusion:** There are negative outcomes when patients delay conventional medical therapy in favour of home remedies to treat diabetic foot infections. These treatments need not be mutually exclusive. We encourage persons with diabetes who wish to try home remedies to seek medical advice in addition as a part of holistic care.

**Keywords:** diabetic foot infections, adverse events, medical treatment, home remedies



- ✓ 695 hasta
- ✓ DAİ'nın etkilerinin azaltmada 3 aşamalı yaklaşım;
  - ✓ Metabolik kontrolün optimal şekilde sağlanmasıyla DAİ'nın gelişiminin önlenmesi
  - ✓ DAİ olmuşsa, erken tanınması ve erken tedavisinin sağlanması
  - ✓ Lokal verilere uygun, kanıta dayalı protokollerin oluşturulması için araştırmaların yapılması
- ✓ Olumsuz faktörlerin varlığında bu yaklaşım etkisiz



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## Ev tedavileri:

- ✓ Parafin mumlu, ballı, aloe veralı, Kalanchoe pinnata yapraklarından oluşan kremler
- ✓ Bilinmeyen satıcılardan alınan non-spesifik haplar
- ✓ Diğer insanların tedavilerinden kalan antibiyotikler
- ✓ İçeriği bilinmeyen uydurma bileşimli bitkisel ilaç

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Ev tedavileri alanlarda:

✓ Debritman ihtiyacı daha fazla

✓ Hastanede kalma süresi daha fazla

✓ Majör amputasyona ihtiyaç fazla (istatistiksel açıdan önemsiz)



- ✓ Doktor tavsiyesi olmaksızın kontrolsüz antibiyotik kullanılması
- ✓ Yanlış ilaç
- ✓ Yanlış doz
- ✓ Direnç gelişimi
- ✓ Tedavide gecikme

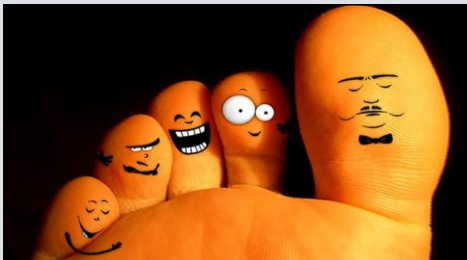


- ✓ Son yıllarda kontrolsüz bir şekilde artan alternatif tıbbı yönelme
- ✓ Konunun uzmanı olmayanlar tarafından uygulanan alternatif tedavi yöntemleri hastanın doğru tedaviyi almasının önüne geçebilmekte





- ✓ Yaşanılan bölgenin özellikleri;
- ✓ Kırsal kesim,
- ✓ Ulaşım şartlarındaki sıkıntı,
- ✓ Zorlu hava şartları soruna katkıda bulunabilmekte



## Sonuç olarak;

- ✓ DAI'u olan hastaların hastaneye geç başvurması kötü sonuçlar doğurabilir
- ✓ Uzun süreli gecikme mortalite ve morbidite açısından ciddi sorunlar yaratabilmekte



- ✓ Tedavideki gecikmelerin hasta kaynaklı sebeplerinin bir kısmı önlenabilir
- ✓ Gecikmenin olası nedenleri ülke bazında araştırılmalı
- ✓ Konuya gereken önem verilmeli, davranışın yerleşmesi için eğitimin sürekliliği sağlanmalı



### Sağlık Ekibi

- Multidisipliner ekip
- İnterdisipliner ekip
- Transdisipliner ekip



- ✓ Çözümüne yönelik  
müti-disipliner takım  
çalışmaları teşvik  
edilmeli
- ✓ Programlar  
geliştirilmeli
- ✓ DA eğitimi verilmesi



- ✓ Ayaklarının sık sık olası enfeksiyon ve yaralar konusunda gözlenmesi
- ✓ Uygun ayakkabı, hijyen
- ✓ Ayak lezyonlarında hangi durumda hastaneye gecikmeden başvurmaları gerektiği konusunda hastaların bilgilendirilmesi

İlginiz için teşekkür ederim

