


## FEMUR FRACTURE: A SYSTEMATIC LITERATURE REVIEW



## FRATURA DE FÊMUR: UMA REVISÃO SISTEMÁTICA DE LITERATURA

TORRES NETO, Márcio Antônio; BESSA, Alexandre Péres; CINTRA, Leandro Pinheiro.

 **Márcio Antônio Torres Neto**, UNIFENAS, Brasil

 **Alexandre Péres Bessa**, UNIFENAS, Brasil

 **Leandro Pinheiro Cintra**, UNIFENAS, Brasil

Revista Científica da UNIFENAS  
Universidade Professor Edson Antônio Velano, Brasil  
ISSN: 2596-3481  
Publicação: Mensal  
vol. 7, nº. 1, 2025  
revista@unifenas.br

Recebido: 13/12/2024  
Aceito: 06/02/2025  
Publicado: 07/02/2025

**ABSTRACT: Introduction:** This study addresses the increase in the number of femur fractures during the COVID-19 pandemic, a period that had a profound impact on public health in several areas. This type of fracture represents a serious problem, especially in elderly patients, due to bone fragility and the high risk of complications. **Objective:** to gather and analyze scientific articles that address the topic of proximal femur fractures in the elderly, as well as fractures resulting from traffic accidents, between 2020 and 2022. **Methodology:** A systematic review of the literature was carried out, using the PubMed platform as a database. Sixteen studies were considered eligible for full-text analysis, and at the end of the evaluation process, 15 articles were selected to compose the study. The exclusion criteria were review articles, studies prior to 2020, and articles with inconclusive results. **Results:** The steps for selecting articles are presented in a flowchart showing the research platforms used, the number of studies identified, and the number and justifications for the excluded articles. Initially, 42 articles were identified using the search strategies in PubMed. After reading the title and abstract, 26 studies were excluded, and 16 were considered eligible for full-text analysis, in which the inclusion criteria were applied. In the end, 15 articles were included and integrated into the systematic review. The studies were conducted in several countries and included patients with an average age over 60 years old who were included in the COVID-19 pandemic. According to the descriptors used in PubMed, the articles are from 2020 to 2022. Most of the studies showed that elderly patients with femur fractures had a longer treatment time when associated with COVID-19, also increasing the mortality rate. Most studies have shown that patients who tested positive for COVID-19 associated with femur fracture had a significantly increased mortality rate compared to those with femur fracture but who tested negative. Proximal femur fracture is one of the most treated injuries by orthopedic teams. However, during the pandemic, challenges arose in the management of these patients. Even so, it was possible to observe that early surgical intervention, performed within 48 hours after hospital admission, is an essential practice to ensure a better prognosis for patients with femur fractures. Still, studies indicated that, among patients with femur fractures, those who tested positive for COVID-19 had higher mortality rates when compared to those who tested negative. **Conclusion:** Given this, adequate preparation of health professionals to deal with these complex cases, which

involve both patient fragility and the risk of coronavirus infection, is essential. Investing in training and improving care protocols can result in better clinical outcomes, both in the perioperative and postoperative periods.

**KEYWORDS:** Femur Fractures; Elderly; Orthopedics; COVID-19.

**RESUMO: Introdução:** Este trabalho aborda o aumento do número de fraturas de fêmur durante os anos de pandemia de COVID-19, que foi um período que impactou profundamente a saúde pública em diversas esferas. Esse tipo de fratura representa um problema grave, especialmente em pacientes idosos, devido à fragilidade óssea e ao risco elevado de complicações. **Objetivo:** reunir e analisar artigos científicos que abordem o tema das fraturas de fêmur proximal em idosos, bem como fraturas decorrentes de acidentes de trânsito, entre os anos de 2020 e 2022. **Metodologia:** Foi realizada uma revisão sistemática da literatura, utilizando como base de dados a plataforma PubMed. 16 estudos foram considerados elegíveis para a análise completa de texto completo, sendo que, ao final do processo de avaliação, 15 artigos foram selecionados para compor o trabalho. Os critérios de exclusão foram artigos de revisão, trabalhos anteriores a 2020, artigos com resultados inconclusivos. **Resultados:** As etapas de seleção dos artigos estão apresentadas em fluxograma onde constam as plataformas de pesquisa utilizadas, o número de estudos identificados, assim como o número e as justificativas dos artigos excluídos. Inicialmente, com as estratégias de busca, identificou-se 42 artigos através do PubMed. Na leitura de título e resumo foram excluídos 26 estudos, tendo sido considerados 16 elegíveis para análise de texto completo em que se aplicaram os critérios de inclusão. Ao final foram incluídos 15 artigos que integraram a revisão sistemática. Os estudos foram realizados em diversos países e incluíram pacientes com média de idade acima de 60 anos e que estavam inseridos no período da pandemia do COVID-19. Pelos descritores utilizados no PubMed os artigos são de 2020 a 2022. A maior parte dos estudos demonstrou que idosos com fratura de fêmur apresentaram tempo de tratamento mais prolongado quando associado com COVID-19, elevando também a taxa de mortalidade. A maior parte dos estudos demonstrou que pacientes que testaram positivo para COVID-19 associado com fratura de fêmur tiveram um aumento significativo na taxa de mortalidade comparado com aqueles com fratura de fêmur, mas que tiveram teste negativo. A fratura de fêmur proximal é uma das lesões mais comumente tratadas por equipes ortopédicas. Entretanto, durante a pandemia, surgiram desafios no manejo desses pacientes. Mesmo assim, foi possível observar que a intervenção cirúrgica precoce, realizada em até 48 horas após a admissão hospitalar, é uma prática essencial para garantir um melhor prognóstico aos pacientes com fraturas de fêmur. Ainda assim, os

estudos indicaram que, entre os pacientes com fratura de fêmur, aqueles que testaram positivo para COVID-19 apresentaram taxas de mortalidade maiores quando comparados aos que testaram negativo. **Conclusão:** Diante disso, o preparo adequado dos profissionais de saúde para lidar com esses casos complexos, que envolvem tanto a fragilidade do paciente quanto o risco de infecção pelo coronavírus, é fundamental. Investir em capacitação e no aprimoramento dos protocolos de atendimento pode resultar em melhores desfechos clínicos, tanto no período perioperatório quanto no pós-operatório.

**PALAVRAS-CHAVE:** Saúde Mental; Atletas; Medicina do Esporte; Esgotamento Psicológico.

## REFERÊNCIAS

Bilgetekin YG, et al. Does the COVID-19 pandemic period itself increase early mortality rates of elderly patients with hip fractures in Turkey? *Medicine*. 2021 Nov 5;100(44):e27740.

Costa G, et al. The impact of COVID-19 prevention measures on epidemiology of orthopedic injuries: the outbreak ages fractures. *Acta Biomed*. 2020 Nov 10;91(4):e2020158.

Dallari D, et al. Early mortality in hip fracture patients admitted during the first wave of the COVID-19 pandemic in Northern Italy: a multicentre study. *J Orthop Traumatol*. 2021 Apr 5;22(1).

Duple L, Oputa TJ, Bourne JT. 30-day mortality for fractured neck of femur patients with concurrent COVID-19 infection. *Eur J Orthop Surg Traumatol*. 2020 Sep 4.

Ertürk C, et al. Orthopedics and 3D technology in Turkey: A preliminary report. *Joint Dis Relat Surg*. 2021;32(2):279–89.

Kumar P, et al. 30-Day mortality rate in hip fractures among the elderly with coexistent COVID-19 infection: A systematic review. *Indian J Orthop*. 2021 Mar 3;55(3):571–81.

Fischer H, et al. Management of proximal femur fractures in the elderly: current concepts and treatment options. *Eur J Med Res*. 2021 Aug 4;26(1).

Gawronska K, Lorkowski J. Falls as one of the atypical presentations of COVID-19 in older population. *Geriatr Orthop Surg Rehabil*. 2021 Jan 1;12:215145932199661.

Ghosh S, et al. Surgically treated COVID-19-positive trauma patients had a higher fatality rate: A rural district general hospital's perspective in the United Kingdom. *Cureus*. 2021 Oct 19.

Giorgino R, et al. COVID-19 elderly patients treated for proximal femoral fractures during the second wave of pandemic in Italy and Iran: A comparison between two countries. *Medicina (Kaunas)*. 2022 Jun 9;58(6):781.

Maffulli N, Aicale R. Proximal femoral fractures in the elderly: A few things to know, and some to forget. *Medicina*. 2022 Sep 20;58(10):1314.

Maniscalco P, et al. A preliminary experience with a new intramedullary nail for trochanteric fractures. *Acta Biomed*. 2020 May 30;91:122–7.

Muñoz Vives JM, et al. Mortality rates of patients with proximal femoral fracture in a worldwide pandemic: Preliminary results of the Spanish HIP-COVID observational study. *J Bone Joint Surg Am*. 2020 Jul 1;102(13):e69.

Pass B, et al. COVID-19 and proximal femur fracture in older adults—a lethal combination? An analysis of the Registry for Geriatric Trauma (ATR-DGU). *J Am Med Dir Assoc*. 2022 Apr 1;23(4):576–80.

Santos DDS, et al. Impact of COVID-19 on mortality and hospitalization in older adults with hip fracture. *Acta Ortop Bras*. 2022;30(5):e255298.

Stephens A, et al. Secondary prevention of hip fragility fractures during the COVID-19 pandemic: Service evaluation of “MRS BAD BONES”. *JMIR Aging*. 2020 Dec 22;3(2):e25607.

Turgut A, et al. Effect of COVID-19 pandemic on the fracture demographics: Data from a tertiary care hospital in Turkey. *Acta Orthop Traumatol Turc*. 2020 Aug 13;54(4):355–63.

Zagra L, et al. Do standards of care and early outcomes of periprosthetic fractures change during the COVID-19 pandemic? A multicentre study. *J Orthop Traumatol*. 2021 Jun 14;22(1):22.