

KORELASI ANTARA *FEMORAL NOTCH WIDTH*, *NOTCH WIDTH INDEX*, DAN *NOTCH SHAPE* DENGAN DERAJAT KEPARAHAN *ANTERIOR CRUCIATE LIGAMENT INJURY*

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INTISARI

Latar Belakang: *Anterior cruciate ligament* (ACL) memiliki peran penting dalam menjaga stabilitas lutut, dan cedera pada ACL merupakan cedera yang umum terjadi, terutama di kalangan atlet dengan intensitas tinggi. Meskipun berbagai penelitian telah melaporkan hubungan antara morfometri lutut dengan kejadian ruptur ACL, masih terdapat kekurangan pemahaman tentang korelasi antara morfometri lutut dengan derajat keparahan cedera ACL.

Tujuan: Mengetahui korelasi antara *femoral notch width*, *notch width index*, dan *notch shape* dengan derajat keparahan *anterior cruciate ligament injury*.

Metode: Penelitian analitik observasional yang melibatkan 31 orang pasien yang mengalami cedera ACL di RSUP Dr Sardjito. Data penelitian diperoleh secara retrospektif berdasarkan data rekam medis. *Femoral notch width*, *notch width index*, dan *notch shape* dianalisis korelasinya dengan derajat keparahan *anterior cruciate ligament injury* berdasarkan pemeriksaan MRI.

Hasil: Mayoritas subjek penelitian ini berusia 21-30 tahun (35,5%), mayoritas berjenis kelamin laki-laki (54,8%), dan mayoritas mengalami trauma dengan mekanisme kontak (54,8%). Mayoritas subjek penelitian ini mengalami ACL *injury* yang termasuk dalam kategori *partial tear* (54,8%), mayoritas memiliki *notch shape* yang termasuk dalam tipe W (38,7%), memiliki rerata *femoral notch width* sebesar 1,94 cm, dan memiliki rerata *notch width index* sebesar 0,26. Terdapat korelasi yang signifikan antara *femoral notch width*, *notch width index*, dan *notch shape* dengan derajat keparahan *anterior cruciate ligament injury* (seluruhnya memiliki $p < 0,001$).

Kesimpulan: Ukuran *femoral notch width* dan *notch width index* yang lebih kecil serta *notch shape* tipe A berkorelasi dengan derajat keparahan *anterior cruciate ligament injury* yang lebih berat

Kata Kunci: morfometri lutut; cedera ACL; *magnetic resonance imaging*

CORRELATION BETWEEN FEMORAL NOTCH WIDTH, NOTCH WIDTH INDEX, AND NOTCH SHAPE WITH THE SEVERITY OF ANTERIOR CRUCIATE LIGAMENT INJURY

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ABSTRACT

Background: The anterior cruciate ligament (ACL) has an important role in maintaining knee stability, and ACL injuries are common injuries, especially among high-intensity athletes. Although various studies have reported a relationship between knee morphometry and the incidence of ACL rupture, there is still a lack of understanding of the correlation between knee morphometry and the severity of ACL injury.

Objective: To determine the correlation between femoral notch width, notch width index, and notch shape and the severity of anterior cruciate ligament injury.

Methods: Observational analytical study involving 31 patients who experienced ACL injuries at Dr Sardjito Hospital. Research data was obtained retrospectively based on medical record data. Femoral notch width, notch width index, and notch shape were analyzed for correlation with the severity of anterior cruciate ligament injury based on MRI examination.

Results: The majority of research subjects were aged 21-30 years (35.5%), the majority were male (54.8%), and the majority experienced trauma by contact mechanism (54.8%). The majority of subjects in this study experienced an ACL injury which was included in the partial tear category (54.8%), the majority had a notch shape which was included in the W type (38.7%), had an average femoral notch width of 1.94 cm, and had an average notch width index of 0.26. There was a significant correlation between femoral notch width, notch width index, and notch shape with the severity of anterior cruciate ligament injury ($p < 0.001$).

Conclusion: Smaller femoral notch width and notch width index and type A notch shape correlate with a greater degree of severity of anterior cruciate ligament injury

Keywords: knee morphometry; ACL injury; magnetic resonance imaging