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[Archives](#)
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Home > Vol 96, No 4 > **Siripakarn**

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### Multipurpose External Fixation for Unstable Comminuted Intraarticular Fracture of Distal Radius

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#### Abstract

**Background:** Most of the Intraarticular distal radius fractures are complex and unstable. They are caused by high-energy injuries. The optimal and appropriate treatment remains a topic of controversy. Many different methods of treatment have been advocated such as closed reduction maintained by cast, K-wire fixation with cast, and opened reduction with internal fixation with plate and screws or external fixation with or without K-wire augmentation.

**Objective:** To study the efficacy of the TU Model External Fixator for the treatment of unstable intraarticular fracture of distal radius. This was assessed by radiographic anatomical alignment and clinical functional outcome.

**Material and Method:** Between January 2009 and March 2011, 147 cases of displaced unstable intra articular fracture of distal radius were treated at Thammasat University Hospital. Among these, 35 cases were treated by closed reduction and fixed by TU Model External Fixator. Their anatomical alignment (Jupiter and Knirk grading) and clinical outcome (Modified Green and O'Brien score) were assessed with at least 18 months of follow-up. The inclusion criteria are age more than 18 year and AO Type A2 to Type C3 unstable comminuted intraarticular fracture. The patients were excluded if they were Type II Gustillo open fracture, cannot follow the treatment protocol for at least two months, and the cases with volar marginal intraarticular fracture (AO type B or volar Barton pattern), or were younger than 18 year.

**Results:** The anatomical outcome were good to excellent in 28 of 30 cases = 93%. The clinical outcome was excellent in 21 cases. The functional result (Green & O'Brien) were good to excellent in 28 of 31 cases = 90%.

**Conclusion:** The study shows the functional and/or anatomical outcome for the treatment of the unstable intraarticular fracture of distal radius by the TU Model external fixator. It demonstrated equally the efficacy of this device when compared to the previous studies by the other researchers. Therefore, the TU Model external fixator could be a new device for the treatment of unstable comminuted fracture of the distal radius.

**Keywords:** External fixator, Intraarticular fracture, Distal end radius, Treatment

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