

# Efek pemberian asam traneksamat intraartikular intraoperatif terhadap perdarahan pasca operasi dan transfusion rate pasca operasi total knee arthroplasty = The Effect of intraarticular tranexamic acid given intraoperatively and intravenous tranexamic acid given preoperative to post surgical bleeding and tranfusion rate post total knee arthroplasty

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## Abstrak

### <b>ABSTRAK</b><br>

Latar Belakang. Meskipun kemajuan dalam desain dan bentuk fiksasi pada implant total knee replacement (TKR) meningkatkan kesintasan dan fungsi TKR secara dramatis, jumlah perdarahan prosedur ini hingga kini masih merupakan masalah penting yang belum dapat teratasi dengan baik.

Metode. Penelitian ini adalah randomized controlled trial. Terdapat 28 pasien yang menjalani TKR periode Agustus 2014 hingga Februari 2016 di Rumah Sakit Cipto Mangunkusumo, 22 diantaranya memenuhi kriteria inklusi dan dibagi menjadi tiga kelompok. Kelompok kontrol, kelompok asam traneksamat intraartikular intraoperatif dan kelompok asam traneksamat intravena preoperatif. Perdarahan intraoperatif, kadar hemoglobin (Hb) preoperasi hingga hari kelima pasca operasi, total produksi drain, jumlah transfusi total dan hari pencabutan drain dicatat dan dibandingkan.

Hasil. Jumlah transfusi pada kelompok intraartikular ( $200 \pm SB 100$  ml) dan intravena ( $238 \pm SB 53$  ml) secara signifikan berbeda dengan kelompok kontrol ( $1016 \pm SB 308.2$  ml) ( $p = 0.001$ ). Total produksi drain pada kelompok intraartikuler ( $328 \text{ ml} \pm SB 193$  ml) maupun intravena ( $391 \text{ ml} \pm SB 185$  ml) berbeda bermakna dengan kelompok kontrol ( $652 \pm SB 150$  ml) ( $p = 0.003$ ). Tidak terdapat perbedaan yang bermakna antara jumlah transfusi antara grup intravena dengan grup intraartikuler. Tidak terdapat perbedaan yang bermakna antara kadar Hb baik preoperasi maupun pascaoperasi, jumlah perdarahan intraoperatif, maupun hari drain dicabut pada setiap kelompok.

Simpulan. Pemberian asam traneksamat menghasilkan total transfusi dan total produksi drain yang secara signifikan berbeda dibandingkan dengan kontrol, namun tidak terdapat perbedaan yang bermakna antara jumlah transfusi antara grup intravena dengan grup intraartikuler. Pemberian asam traneksamat baik intravena maupun intraartikuler dapat mengurangi jumlah transfusi dan total produksi drain secara efektif pada pasien yang menjalani prosedur TKR

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### <b>ABSTRACT</b><br>

Introduction. This is a randomized controlled trial study. From 28 patients who underwent TKR from August 2014 to Februari 2016 at Cipto Mangunkusumo Hospital, 22 patients met the inclusion criteria and were divided into three groups. The control group, tranexamic acid intraarticular-intraoperative group, and intravenous tranexamic acid preoperative group. Intraoperative bleeding, hemoglobin (Hb) level on pre-operative to fifth day post surgery, total drain production, total blood tranfusion needed and the drain

removal timing were recorded and compared.

**Method.** This is a randomized controlled trial study. From 28 patients who underwent TKR from August 2014 to Februari 2016 at Cipto Mangunkusumo Hospital, 22 patients met the inclusion criteria and were divided into three groups. The control group, tranexamic acid intraarticular-intraoperative group, and intravenous tranexamic acid preoperative group. Intraoperative bleeding, hemoglobin (Hb) level on pre-operative to fifth day post surgery, total drain production, total blood tranfusion needed and the drain removal timing were recorded and compared.

**Result.** The amount of blood transfusions needed both in the intra-articular group ( $200 \pm \text{SD } 100\text{ml}$ ) and in the intra-venous group ( $238 \pm \text{SD } 53 \text{ ml}$ ) was significantly different compared with those in the control group ( $1016 \pm \text{SD } 308.2 \text{ ml}$ ) ( $p = 0.001$ ), but there is no significant difference between the amount of blood transfusion needed in the intra-articular group and the amount needed in the intra-venous group. The total drain production in the intra-articular group ( $328 \text{ ml} \pm \text{SD } 193 \text{ ml}$ ) and intra-venous group ( $391 \text{ ml} \pm \text{SD } 185 \text{ ml}$ ) was significantly different compared to those in the control group ( $652 \pm \text{SD } 150 \text{ ml}$ ) ( $p = 0.003$ ). There is no significant difference between the levels of both preoperative and postoperative hemoglobin, the amount of intraoperative bleeding, as well as the duration of drain usage on each group.

**Consclusion.** Tranexamic acid used both intra-articularly and intra-venously significantly reduce the amount of blood transfusion needed dan total drain production compared to control, but there is no significant difference between the intra-articular group and intra-venous group.