

# Perbandingan antara teknik penyuntikan larutan tumescent onepermil secara terstruktur dan acak untuk flap kulit berbasis perforator = The Systematic injection patterned technique of onepermil tumescent solution for perforator based skin flap is it better than the random patterned technique

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## Abstrak

**Pendahuluan:** Tujuan studi ini adalah untuk menemukan teknik penyuntikan larutan tumescent ONEPERMIL yang aman dengan menghindari cedera pembuluh darah perforator pada flap kulit berbasis perforator.

**Metode:** Studi eksperimental dengan kontrol dan randomisasi dilakukan pada 20 ekor Rattus novergicus strain Wistar yang sehat dengan berat 220-270 gram. Tiga mL larutan tumescent ONEPERMIL disuntikkan 10 menit sebelum dilakukan elevasi islanded groin flap. Teknik penyuntikan yang dirancang secara sistematis dibandingkan dengan teknik penyuntikan acak yang berperan sebagai kontrol. Kejernihan lapangan operasi beserta diameter pedikel pembuluh darah dicatat. Luas flap yang vital diolah dengan program AnalyzingDigitalImages® pada hari ke-7 pascaperlakuan. Analisis statistik dilakukan dengan tes Chi-square ( $p < 0,05$ ).

**Hasil:** Larutan tumescent ONEPERMIL menghasilkan lapangan operasi yang bersih tanpa perdarahan pada semua subyek. Ditemukan nekrosis sebanyak 3 dan 4 flap masing-masing pada grup acak dan sistematis. Tidak terdapat hubungan yang signifikan secara statistik ( $p > 0,05$ ) antara kedua teknik penyuntikan larutan tumescent berdasarkan nekrosis flap.

**Kesimpulan:** Walaupun larutan tumescent ONEPERMIL menghasilkan lapangan operasi bersih tanpa perdarahan, namun teknik penyuntikan secara sistematis tidak menghasilkan perbedaan bermakna bila dibandingkan dengan teknik acak.

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**Background:** We aimed to find a safe injection technique of ONEPERMIL tumescent solution to avoid injuring the vessels in perforator-based skin flap.

**Methods:** A randomized controlled experimental study was conducted on both groins of 20 healthy Wistar stained-Rattus novergicus weighing 220-270 grams. A systematic injection pattern was compared to the random injection pattern which serves as control. Three mL ONEPERMIL tumescent solution was injected subcutaneously before elevation of the islanded groin flap. Clarity of the operating field along with the size of the pedicle were recorded. The survival area of the skin flap was managed with

AnalyzingDigitalImages® on post operative day-7. The data was analyzed with Chi-square test ( $p < 0,05$ ).

**Results:** Totally bloodless operative field was observed in all subjects. Three and four flaps turned into total or partial necrosis in random and systematic pattern group subsequently. No significant difference ( $p > 0,05$ ) was found between the injection technique groups in terms of flap necrosis.

**Conclusion:** Although the ONEPERMIL tumescent technique is advantageous in a way that it provides a totally bloodless operative field, but systematic patterned-technique of injection did not provide a different result in comparison to the custom random patterned multi-passing needle injection technique.