Awitan dan durasi kerja lidocaine dalam larutan one-per-mil tumescent = The onset and duration of action of lidocaine in one-per-mil tumescent solution / Puri Ambar Lestari

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Abstrak

ABSTRAK
Pendahuluan: Tujuan studi ini adalah untuk mengetahui awitan dan durasi kerja lidocaine dalam larutan one-per-mil tumescent.
Metode: Studi eksperimental dengan kontrol dan desain buta acak ganda (triple blind study) dilakukan pada 12 subjek sehat yang diinjeksikan larutan one-per-mil tumescent mengandung lidocaine 0,2% pada satu tangan atau lidocaine 2% pada tangan kontralateral. Awitan dan durasi kerja lidocaine diukur berkala dengan uji sensoris Semmes-Weinstein dan diskriminasi dua titik. Tingkat nyeri diukur dengan visual analogue scale (VAS)
Hasil: Awitan tercepat pada grup lidocaine 2% tercatat pada menit ke 1 (rentang: menit ke 1 hingga 6). Awitan rata-rata pada grup larutan one-per-mil tumescent adalah 4.67 menit (± 2.53 menit). Durasi kerja lidocaine 2% adalah 95.58 menit (± 29.82 menit), sedangkan durasi kerja larutan one-per-mil tumescent adalah 168.5 menit (± 45.1 menit) dengan uji diskriminasi dua titik dan 186.83 menit (± 44.02 menit) dengan uji sensoris Semmes-Weinstein. Terdapat perbedaan awitan dan durasi kerja yang signifikan pada kedua grup. Tidak ditemukan perubahan sensibilitas ujung jari yang signifikan pada kedua grup pada saat sebelum dan sesudah intervensi.
Kesimpulan: Studi ini menunjukkan awitan dan durasi kerja lidocaine dalam larutan one-per-mil tumescent adalah rata-rata 4,67 dan 168,5 menit. Lidocaine 0,2% dalam larutan one-per-mil tumescent menghasilkan awitan yang lebih lambat dan durasi kerja yang lebih panjang dibandingkan dengan lidocaine 2%.
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ABSTRACT
Background: We aimed to profile the onset and duration of action of the lidocaine in one-per-mil tumescent solution.
Methods: A controlled, prospective, and randomized triple blind study was conducted on both hand of 12 healthy volunteers who were injected in two consecutive days in his ring finger with either one-per-mil tumescent solution containing 0.2% lidocaine (experimental finger) in one hand or 2% lidocaine (control finger) in the contralateral hand. The onset and duration of action of lidocaine were measured over time by Semmes-Weinstein and two-point discrimination test. The level of pain was evaluated using visual analogue scale (VAS).
Results: The fastest onset of action in 2% lidocaine group was in the first minute (range, minute 1 to 6). Average onset of action of one-per-mil tumescent solution was 4.67 minutes (± 2.53 minutes). Duration of action of 2% lidocaine was 95.58 minutes (± 29.82 minutes), meanwhile the duration of one per-mil tumescent solution was 168.5 minutes (± 46.4 minutes) by 2PD test and 186.83 minutes (± 44.02 minutes) by SW test. There were significant difference of the onset and duration of action of both groups. Fingertip sensibility before and after the intervention did not change significantly in both group.

Conclusion: This study shows that the onset and duration of action of lidocaine in the one-per-mil solution injected in the finger using tumescent technique subsequently at 4.67 and 168.5 minutes in average. 0.2% lidocaine in one-per-mil tumescent solution produced slower onset and longer duration of action compared to 2% lidocaine.