Formulasi dan uji efek anestesi sediaan emulgel anestesi lokal yang mengandung lidokain, prilokain, dan benzokain = Formulation and evaluation of lidocaine, prilocaine, and benzocaine emulgel and its local anesthetic effect

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Abstrak

Penghantaran obat secara topikal merupakan alternatif penghantaran obat anestesi lokal. Dalam penelitian ini, bentuk sediaan emugel dipilih karena memiliki kelebihan gel dan emulsi. Emulgel diformulasi dengan menggunakan zat aktif anestesi lokal berupa lidokain, prilokain, dan benzokain. Emulgel dengan ketiga zat aktif anestesi lokal tersebut diharapkan menjadi emulgel yang stabil dan sesuai untuk penggunaan topikal. Kombinasi zat aktif anestesi lokal sering digunakan untuk mendapatkan efek sinergis dan menghindari efek samping obat yang tidak diinginkan. Penelitian ini bertujuan untuk memformulasikan sediaan emulgel lidokain, prilokain, dan benzokain serta menguji efek anestesinya. Ketiga zat aktif diformulasikan secara tunggal, kombinasi dua dan tiga zat aktif dengan konsentrasi total 3%. Emulgel kemudian dievaluasi dengan uji pH, uji viskositas, dan uji freeze and thaw. Uji efek anestesi dilakukan dengan metode tail flick. Hasil penelitian menunjukkan emulgel yang stabil, memiliki pH yang sesuai dengan pH kulit (4,5-6,5), dan sifat alir plastis thiksotropik. Uji efek anestesi dengan tail flick menunjukkan efek yang tidak berbeda secara bermakna (p > 0,05) pada sediaan emulgel tunggal dan kombinasi.

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Topical drug delivery is an alternative for local anesthetic drug delivery. In this research, emugel was chosen because it had advantages of emulsion and gel. Emulgel was formulated with local anesthetic agents which were lidocaine, prilocaine, and benzocaine. Emulgel with those local anesthetic agents were expected to be stable and suitable for topical usage. Local anesthetic agent is frequently used as combination to get synergic effect and to prevent drug side effect. The purpose of this research was to formulate lidocaine, prilocaine, and benzocaine emulgel and to evaluate the local anesthetic effect. The three active ingredients were formulated as single and combination of two and three active ingredients with 3% of total concentration. The emulgel were then evaluated in term of pH, viscosity, freeze and thaw test. The anesthetic effect was tested with tail flick method. The results showed that the anesthetic emulgel were stable physically, pH 4.5-6.5 which was acceptable on skin, and plastic thixotropic rheology. The result of the local anesthetic effect study showed that there was no significant difference (p > 0.05) between single and combination formula.