

INTISARI

Pewangi ruangan gel dan spray adalah produk berbahan kimia untuk mengurangi bau tidak menyenangkan di ruangan tertutup. Kebanyakan orang tidak menyadari bahaya dibalik pewangi ruangan. Bahan kimia pewangi ruangan (*formaldehyde* dan ftalat), dapat mempengaruhi fungsi paru-paru. Bayi dan anak-anak, termasuk kelompok rentan terhadap efek buruk pewangi ruangan. Penelitian bertujuan mengkaji pengaruh pendedahan pewangi ruangan gel dan spray terhadap gambaran histologi alveolus bayi tikus *Rattus norvegicus*. Desain penelitian eksperimental murni, dengan pendekatan *post-test only control group design*. Subjek penelitian 30 ekor bayi tikus putih (*Rattus norvegicus*) jantan *Sprague Dawley*, terbagi atas 10 ekor untuk setiap kelompok gel (P1), spray (P2), dan kontrol (K). Pendedahan pewangi ruangan dimulai saat bayi tikus berumur 8 hari dan dilakukan selama 67 hari. Dosis awal pendedahan selama 15 menit/sesi, 2x/hari (pagi dan sore) dan dosis dinaikkan selama 15 menit/sesi, satu minggu sekali hingga dosis maksimum 4,5 jam/hari. Selanjutnya, dilakukan pembedahan dan pembuatan preparat untuk uji histopatologi. Data dianalisis dengan metode *Kruskal Wallis*, dilanjutkan uji *Mann Whitney*. Hasil penelitian ketebalan septum interalveolaris dan diameter alveolus menunjukkan perbedaan bermakna ($p < 0,05$) dari kelompok kontrol (K), gel (P1), dan spray (P2). Jumlah sel radang (limfosit, PMN, plasma, eosinofil, dan histiosit), pada perbandingan kelompok kontrol (K), gel (P1), dan spray (P2) memiliki perbedaan yang bermakna ($p < 0,05$), kecuali sel PMN, eosinofil, dan histiosit pada perbandingan gel (P1) dan spray (P2). Uji histopatologi menunjukkan pewangi ruangan gel memiliki efek lebih buruk daripada spray.

Kata kunci : histologi alveolus, pewangi ruangan, bayi *Rattus norvegicus*.

ABSTRACT

Gel and spray air fresheners are chemical products to reduce unpleasant odors in indoor spaces. Most people do not realize the danger behind the air freshener. Chemicals in air freshener (formaldehyde and phthalates), may affect pulmonary function. Infants and children, who vulnerable to pathological effects of air freshener. The research aimed to assess the effect of gel and spray air freshener exposure on alveolar histology of Rattus norvegicus infants. The research design is pure experimental, with the approach of the post-test only control group design. Research subjects are 30 male white rat infants (Rattus norvegicus) Spraque Dawley, divided into 10 infants for each group gel (P1), spray (P2), and control (K). Air freshener exposure begins when the infants 8 days old, and this exposure for 67 days. The initial dose exposure for 15 min/session, 2x/day (morning & afternoon) and increased for 15 min/session, once a week up to a maximum dose of 4.5 hours/day. Then followed by surgery and made preparations for histopathological test. The data were analyzed by Kruskal-Wallis method, followed by Mann Whitney test. Results from the research for thickness of septum interalveolaris and diameter of alveolar, shows that there are significant differences ($p < 0,05$) from the control group (K), gel (P1), and spray (P2). The number of inflammatory cells (lymphocytes, PMN, plasma, eosinophils, and histiocytes), in comparison of gel group (P1), control (K), and spray (P2) has a significant difference ($p < 0,05$), except PMN cells, eosinophils, and histiocytes in the comparison group gel (P1) and spray (P2). Histopathological test shows that gel air freshener has a worse effect than the spray.

Keywords : histology of alveolar, air freshener, Rattus norvegicus neonates