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Prespective

Various Anesthetic Agents used in Dentistry and their Contraindications

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DESCRIPTION

Anesthesia is a medical therapy that prevents patients from feeling pain during surgery. Although anaesthesia is not a new concept, its advantages are still worth appreciating. Anesthesia is classified mainly into two types: local and general. Dental anaesthesia includes Maxillary anaesthesia and Mandibular anaesthesia. Local anaesthesia is used in the buccal region of the maxillary alveolus which is diffused through thin plate of cortical in maxilla, then further diffused into the dental pulp to achieve the local anaesthetic effect in the dental region. Although there are different techniques used for mandibular teeth but mostly regional block and infiltration techniques are used. It is mainly based on the age factor and type of tooth to be anaesthetized. Infiltration technique is suitable for deciduous teeth and for adults 200 mg of lignocaine is used for adults. For cardiac patients 3.5 ml of epinephrine is used, the main mechanism involved in infiltration technique was after the anaesthesia administered, the nerve impulse conduction is blocked by inhibition of sodium channels at the nerve endings along with axon, this cause the decrease in sodium ions permeability of nerve cell membrane. It prevents action potential from forming. During infiltration the needle is penetrated at an angle of 45 degrees with the buccal cortical plate of the bone through taut tissue of the muccobuccal fold. In regional block technique the inferior alveolar nerve block is probably one of the most common methods used in mandibular teeth of adults. There are other supplementary techniques for mandibular anaesthesia like intraosseous anaesthetic injection deposits the anaesthetic injection directly into the alveolar bone which is adjacent to the apex of the root of the tooth. Periodontal ligament anaesthesia is initially used for endodontic treatment. In this technique 0.2 ml of local anaesthetic solution for each root of tooth is given into the narrow spaces of the tooth. Onset of action for periodontalligament anaesthesia is between 15 to 20 seconds, It is more beneficiary when compared to inferior dental block anaesthesia. In intra-pulpal anaesthesia the direct placement of anaesthetic agent using a small needle into the dental pulp chamber, intra papillary anaesthesia is used as a supplementary technique for infiltration technique. It involves direct deposition of anaesthetic agent into the papilla combined with tissue branching at the site of injection. Local anesthetic agents usually contains adrenaline in different ratios such as in lidocaine has 1:80000 of adrenaline or articaine contains 1:100000 adrenaline which has direct effect on the cardiac output by increasing the heart rate itself, therefore it causes cardiac dysrhythmia and unstable angina pectoris. However lidocaine is used in inferior block which is usually preferred for paediatrics, which causes less post-operative pain. The dose of lidocaine is often reduced which is based on the health implications and behavioural habits. While using the inferior alveolar nerve block, it is recommended not to use bend needle, sometimes it may cause the fracture of the needle.

CONCLUSION

Although there are different techniques are available in dental anaesthesia, the main motive for dental anaesthesia is to reduce the pain. The high frequencies coming out from the syringe device inhibits the pain sensations by interfering with the signals of pain coming from brain. The complications of myotoxicity occurs rarely in dental anaesthesia, the greater the exposure to dental anaesthesia the greater the chances of myotoxic effects. Human muscles usually take from 4 days to 365 days to recover from the myotoxic effect. Pain during anaesthesia can be controlled by gate control theory which includes warming of the local anaesthetic cartridges, stretching the oral mucosa or by gentle rubbing of the extra oral skin. The simplest method to avoid any dental anaesthesia side effects is to minimize ones chances of developing complications that require a desensitisation treatment.

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