REVIEW ARTICLE

Diagnosis and Treatment of Prosthetic Joint Infection (PJI)

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RESEARCH ARTICLE

Formulation and Evaluation of Cineole Buccal Strips

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ABSTRACT: The objective of this study was to prepare Buccal strip of Cineole and to evaluate its effective release through buccal cavity using natural bioadhesive polymer. Cineole loaded buccal strips were prepared by solvent casting technique using Pectin Sodium alginate and Gelatin as polymers in three different ratios. The FTIR studies indicated that there is no incompatibility between drug and excipients. Amongst nine formulations P2 (Pectin), S5 (Sodium alginate) and G8 (Gelatin) were selected based on folding endurance and optimal tensile strength. Glycerine was used as plasticizer to produce flexible strip without having major influence on their release property. All batches were subjected to evaluations for Percentage Moisture uptake, Percentage Moisture content, Thickness, Folding Endurance, Percentage Drug content, Percentage Elongation, Tensile strength, and Adhesive strength. No significant difference in drug content was observed between the strips among the nine formulations. The in vitro release profile of formulations P2, S5 and G8 were found to be 98.41%, 78.36% and 99.41% respectively at the end of 12 h. The release kinetics confirms that the formulation S5 followed zero order, non-fickian diffusion model. The ex vivo studies results showed 66.86% of drug release at the end of 12 h. It concluded the sustaining release property of polymer. Stability study revealed that there is no significant change from its initial nature till the period of three months at 40˚C ±2˚C/75±5% RH.

Key words: *Buccoadhesive drug delivery, Gingivitis, Cineole, Buccal strip*

RESEARCH ARTICLE

Development of Topical Drug Delivery For Nabumetone Solid Dispersion

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ABSTRACT
Nabumetone (NBT) is BCS class II drug with low solubility. Its dose is 750 mg and treats discomfort caused due to arthritis. Formation of solid dispersion of NBT with carriers like urea will enhance the bioavailability. Phase-solubility studies revealed AL type of curves showed that the dispersion of urea with NBT significantly increases solubility of drug. The dispersions of NBT were carried out by different methods and evaluated for in vitro drug release, drug content, FTIR, DSC, XRD. All dispersions showed improvement in dissolution rate in comparison with pure drug. These evaluation techniques showed distinct loss of drug crystallinity and showed improvement in dissolution rate. All dispersions were found stable after stability study. Methods showing best drug release were selected for further study of development and evaluation of topical gel formulation. A topical gel has been developed using carbapol 940, propylene glycol, sodium lauryl sulphate. The formulations were evaluated for the physico-chemical and release characteristics. The optimized batch of gels showed good mechanical and physicochemical properties. The results indicated that gel with good bioadhesive and permeability properties could be prepared. The in vitro diffusion study showed drug release with urea was 76.49% in distilled water with solvent wetting method after 8 hrs.

Key words: *Solid dispersion, Nabumetone, Urea, Topical , Gel, Urea*

SHORT COMMUNICATION

Remedial Effect of Banana Peel Extract And Its Formulation

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Abstract

Bananas belonging to the family Musaceae are one of the most important tropical fruits in the world market. Significant quantities of banana peels equivalent to 40% of the total weight of fresh banana are generated as a waste product in industries producing banana based products. Studies show that banana peels are good sources of polyphenols, carotenoids and other bioactive compounds which possess various beneficial effects on human health. However, there is limited information about the phytochemical and pharmacological properties of banana peel. Peels have been reported to possess antifungal and antibiotic components and used for the treatment of Acne. With these considerations the present work has been aimed to exploit the potential value of the peels of 'Poovan' variety of banana including phytochemical, antimicrobial and evaluation of Anti Acne activity by formulating as gel. It was observed that the peels of Poovan banana extract possessed significant antimicrobial activities. Also the gel prepared by using banana peel exhibited characteristic anti acne property when tested against *Propioni bacterium*. Hence from the present study it may be concluded that the banana peels can be tried in herbal formulations in future to provide an effective treatment against acne inducing bacteria and other microorganisms.

Key words: Banana peel, Antimicrobial activity, Anti acne property

SHORT COMMUNICATION

Nine - Piperazinyl Acridine Derivatives - A Novel Class of Antibacterial Agents

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Abstract

A novel series of 9-piperazinyl acridine derivatives were synthesised and characterised by IR, 1H NMR. 9-chloroacridine, 9-piperazin-1-yl acridine and their substituted compounds with varied substitutions were evaluated for in vitro antibacterial activity by measuring the minimum inhibitory concentration, all the derivatives exhibited significant to moderate antibacterial activity. This introductory research on 9-piperazinyl acridine derivatives, paves way for advanced mechanism antibacterial studies.

Key words: N-Phenylanthranilic acid, 9-piperazinyl acridine, antibacterial activity, benzyl derivatives, minimum inhibitory concentration

SHORT COMMUNICATION

A Comparative Study on Paracetamol Versus Ibuprofen In Reducing The Temperature Among The Children

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Abstract

Objective: To compare the efficacy and safety of paracetamol versus ibuprofen monotherapy in reducing the temperature among the children in the age group between 6 months to 15 years.

Materials and methods: 100 children were enrolled in the study and divided into two groups for a period of 2 years. One group of children were treated with only Paracetamol of 15mg/kg/dose every 6 hours and another group of children were treated with Ibuprofen of 10mg/kg/dose every 8 hours. Study subjects were observed in wards from the time of admission for at least 24 hours or till clinical cure was achieved. Independent 't' test was used for statistical analysis and $P<0.05$ was considered as statistically significant. The results were expressed as mean ± SE.

Results: It was observed that no significant difference in the temperature between the groups ($P>0.05$). While comparing the time taken to reach baseline temperature, children who were treated with Ibuprofen was 60 minutes, which reveals the significant effect ($P<0.05$) than acetaminophen group. The total number of doses needed to recover completely from febrile phase and mean duration of hospital stay was significantly ($P<0.05$) lower in ibuprofen group. It was found that significant reduction in temperature ($P<0.05$) before and after treatment. There was incidence of abdominal pain in ibuprofen group whereas no adverse event in paracetamol group.

Conclusion: Although both acetaminophen and Ibuprofen proved to be effective antipyretic agents and were found to be well tolerated by study subjects, Ibuprofen has better antipyretic activity than acetaminophen.

Key words: Fever, Acetaminophen, Ibuprofen, Monotherapy, baseline temperature.