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Formulation and characterization of nanonized Meloxicam containing nasal gels

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Nasal administration route is a novel possibility for systemic delivery of pharmaceutical active agents. Intranasal administration offers some advantages including rapid absorption, avoidance of hepatic first-pass metabolism, painless application, avoidance of gastrointestinal side effects and sterility is not a requirement in the case of nasal formulations. In order to achieve systemic effect, the gel is the most suitable form, because applying additives, longer residence time, better mucoadhesion and increased permeability can be achieved. For nasal administration the modification of the physico-chemical and biopharmaceutical properties of drugs is important in the case of the poor soluble pharmaceuticals. Nanonization is being used to improve the delivery of compounds with poor aqueous solubility. The suspension, prepared during wet nanozation is straight usable as a pre-dipersion for further liquid or semisolid formulation development.

Our aims were to prepare a pre-dispersion of nanonized meloxicam with wet milling technique for development of a nasal gel. PVA (polyvinyl alcohol) was used as an agglomeration inhibitor polymer. The effects of wet milling on the physicochemical properties of meloxicam were studied. To prepare the nasal gel, produced directly from the pre-disprsion sodium hyaluronate was used, as a gel-forming agent. *In vitro* and *in vivo* characterization of nasal gel containing nanonized meloxicam were carried out.

Biography

Csilla Bartos is a PhD student at the University of Szeged, in the Department of Pharmaceutical Technology. Her research work is on the subject of wet milling using different techniques (sonication-acoustic cavitation, planetary ball milling) and development of intranasal formulations (spray, gel); modification of the physicochemical and biopharmaceutical properties of drugs in order to increase the low bioavailability of nasal preparatoins. Her works were presented on domestic and international conferences.

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