Adverse drug experiences in elephants

Drugs are intended for therapeutic purposes if used appropriately. Any drug that is approved and used on a regular basis can have undesirable effects in an individual. Additionally inappropriate use of therapeutic products can cause adverse drug effect (ADE). This will also happen, when drugs are used in species to which they are not indicated. A number of countries including USA and European Community Union (ECU) and Australia have developed a protocol for this, which is called as pharmacovigilance.

Most of the drugs developed for veterinary use are intented for common domestic animals. These drugs, as well as those formulated for human beings are also used in elephants due to sheer necessity.

Pharmacovigilance refers to the generation, collection, maintenance, and evaluation of information on spontaneous drug experience. This is not associated with any planned and pre-approved field trails or clinical studies. The information is contributed from a variety of sources of varying reliability.

Ordinarily veterinary pharmaceuticals are not developed for elephants but for common domestic animals. Hence it is proper to report some adverse drug experiences noticed in elephants. This information will help veterinarians practising on elephants.

Acepromazine (ACP)

Chemically it belongs to phenothiazine group of drugs. Phenothiazines are known to produce photosensitization. When acepromazine was used in tranquillisation along with xylazine it showed photosensitization on the back of the animal. The dose used was ACP 60-80 mg and xylazine 100-mg/ metric tone of body weight. This was also noticed while an elephant has to be sedated during a transport by rail. In all these instances the animal was exposed to solar radiation. The sedated elephant could not take dust bath or spray the body with the fluid collected from stomach or flap the ears. These formed the usual temperature control mechanism of elephants. Similar instance has also been reported by other veterinarians using 90 mg of ACP and 300 mg of xylazine on an elephant of 5ton body weight for transport on truck in Tamil Nadu, a neighbouring state (Selvam, N.P., Thruthalinathan, Swaminathan & Krishnamoorthy V-1996-Zoos' Print). Although photosensitization was reported frequently, when phenothiazine was used as an anthelminthic. Reports on ACP photosensitization are very few. Hence we have discontinued using ACP during drug immobilisation in the open.

Ketamine

Ketamine is extensively used in veterinary practice in domestic animals. The main adverse drug effect (ADE) reported is excitement and seizures instead of sedation. But once, when Ketamine was used in drug immobilisation along with xylazine, the animal showed photosensitization like ACP. It may again be noted that the animal was exposed to high solar radiation after immobilisation.

Tetramizole

Tetramizole is an imidazothiazole group and it is essentially a cholinergic agonist. In one occasion this was used four times than that of recommended in domestic animals i.e. 10 mg/kg. This dose level showed toxicity in elephant. This was largely an extension of its antiparasitic effect, i.e. cholinergic - type signs of salvation, muscular tremors, ataxia, urination and defecation. However animal survived without the administration of atropine.

Diclofenac

Diclofenac is one of the most commonly used non-steroidal anti-inflammatory drugs (NSAID) in man and animals. It is used both as topical as well as systemic. In elephants, Diclofenac produce gastro- intestinal disturbance. In some instances this was so severe that the animal succumbed. Treatment with H_2 blocker like ranitidine can be tried in these conditions.

Since elephants require large volumes of drug formulations to achieve therapeutic result it is often easy to give IV than IM. NSAID like phenylbutazone with Sodium Salicylate when given IV will cause phlebitis, even if perivascular effusion is very small.The product administered was standard strength of pharmaceutical preparation for parentral use.

Similarly thiopentone sodium if given IV in higher concentration than recommended dose has resulted in phlebitis and sloughing of local area.

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