Diclofenac suppositories in the treatment of bone and joint diseases. *A forgotten route*

Fayek Al-Hilli, *DPath, PhD.*

Rectal administration of any drugs is resented by people of all cultures for psychomythical fear that its habitual use will lead to homosexuality, loss of manhood, and interference in the course of nature dictating the anus as an "exit only" opening. On the other hand, females accept vaginal ovules and pessaries as nature dictates dual function of the vagina canal in intercourse and labor. As a patient I would like to share with your readership my experience and that of the orthopedic and rheumatology units of Salmaniya Medical Complex (SMC), Bahrain in the treatment of bone and joint disease using Diclofenac Sodium suppositories.

In 1999, I developed right hip pain diagnosed by magnetic resonance imaging as Bone Marrow Edema syndrome (or transient osteoporosis) involving upper femur but not extending into the neck or head. Physiotherapy together with paracetamol and Celecoxib 200 mg/day were tried for 2 weeks with no pain relieve. As a result of the pain and restriction of leg movements, wasting of the quadriceps muscle developed. Surgical interference to relieve the femoral intramedullay edema pressure was ruled out for fear that the post-operative immobilization will worsen the muscle wasting and that any weight bearing movements will lead to fracture. Subsequently when Diclofenac Sodium 100 mg/day retard capsules were given, pain was relieved within 30 minutes of ingestion and the effect lasted for approximately 10 hours. Paracetamol controlled the pain during the remaining part of the day. With this protocol physiotherapy was possible. However, after 11 days, melena developed indicating direct prostaglandin inhibitory effect of Diclofenac on the gastric mucosa.[1] Diclofenac discontinued and Omeprazole 20 mg per day and other conservative measures were given. At this stage the surgeons deliberated to prescribe other non-steroidal anti-inflammatory drug (NSAID) and considered decompression of the edema or hip replacement once the edema extends into the femoral head. The patient who refused to sacrifice a femoral head for the sake of pain did not favor this. Three factors were considered: (1) The crucial determinant in management was to break the cycle of pain which led to restriction of limb movement and subsequently further muscular wasting, progression of osteoporosis, and more pain. (2) The hip replacement will still leave the bone marrow edema untreated. (3) The post-operative period require weight bearing exercise and this may lead to fractures. As a patient (with reasonable knowledge of medicine), I began to investigate other options. Diclofenac was an effective drug and to circumvent its prostaglandin inhibitory effect on the gastric tissue other routes of administration were considered. The clinicians were unaware that the preparation is available in the form of suppositories, which I successfully used leading to symptomatic relieve within 6 weeks. The pain was relieved after the administration of 12.5 mg pediatric suppositories was felt within 30-45 minutes lasting for up to 5 hours. Up to 4 suppositories were administered per 24 hours depending on the severity of pain thus ensuring comfort throughout the day. With pain relieve, quadriceps strengthening with physiotherapy was possible and this gradually decreased the osteoporosis thus breaking up the above cycle. Magnetic resonance imaging was carried out 18 months after pain relieve showed normal bone density. This experience prompted the clinical practitioners at the rheumatology and orthopedic units of SMC to routinely prescribed pediatric suppositories to their adult patients who also suffer from gastric intolerance to NSAID. The results were remarkably positive.

There is a substantial first pass effect after oral Diclofenac with only about 50% of the drug available systematically.[1] This effect is totally bypassed with rectal administration. Arguably, applying the same ratio while considering that two thirds of the rectal venous drainage is portal (superior and middle rectal veins) and one third systemic (inferior rectal vein) at least 66% of the drug will be available systematically after rectal administration. The 12.5-mg pediatric suppositories are small and well tolerated by adults and readily absorbed within <1 hour. The cost of each suppository is 6 p whereas that of a capsule is 33 p.[2] This means that the cost of 4 suppositories with therapeutic effect lasting for 24 hours is 9 p cheaper than the effect of the capsule, which last for 10 hours.

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From the Department of Pathology, Salmaniya Medical Complex, Bahrain. Address correspondence and reprint requests to Dr. Fayek Al-Hilli, Department of Pathology, Salmaniya Medical Complex, PO Box 12, Bahrain.

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