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Rational combination of COX-2 inhibitors and curcumin in osteoarthritis

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Statement of the Problem: Undertreated or untreated chronic pain impairs one's ability to have a productive life. To analyze the rationality of two anti-inflammatory medications, viz. selective COX-2 inhibitor and curcumin in the treatment of osteoarthritis, we studied the mechanism of action and side effects of selective COX-2 inhibitors and curcumin by literature search.

Methodology & Theoretical Orientation: Rationality of combination of these two drugs was analyzed by following points: Possibility of reduction in total pain score by combining these drugs, possibility of decrease in dose requirement of selective COX-2 inhibitors to control pain in Osteoarthritis and possibility of decrease in the side effects or risk factors of continuing selective COX-2 inhibitors in the presence of curcumin.

Findings: Literature search showed that these two drugs make a rational combination in the treatment of osteoarthritis. Both drugs can act synergistically as anti-inflammatory drugs as they act on different molecules involved in the inflammation. Effective reduction in pain score in combination can be more than individual drug. Selective COX-2 inhibitor's affinity towards COX-2 isoform varies from 30 folds to 200 folds (more affinity, more are cardiovascular events) as this leads to a state in which thromboxane, a pro-aggregatory COX-1 isoform goes unchecked. On the contrary, curcumin has an anti-inflammatory activity but is a blood thinning herb and has proven to be effective at reducing the viscosity of blood and lowering risk of blood clots and serious complications. This is the reason for reducing thrombotic property of selective COX-2 inhibitors by curcumin.

Conclusion & Significance: Literature study shows that selective COX-2 inhibitors and curcumin can be the most effective rational combination of drugs in the treatment of osteoarthritis.

Biography

Samragini Satheesh Pawar is currently a Medical student of HBT Medical College and Dr. R N Cooper Municipal General Hospital, India.

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