

Prevention of liver ischemia reperfusion injury by a combined thyroid hormone and fish oil protocol

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Several preconditioning strategies are used to prevent ischemia-reperfusion (IR) liver injury, a deleterious condition associated with tissue resection, transplantation or trauma. Although thyroid hormone (T3) administration exerts significant protection against liver IR injury in the rat, its clinical application is controversial due to possible adverse effects. Considering that prevention of liver IR injury has also been achieved by n-3 polyunsaturated fatty acid (n-3 PUFA) supplementation to rats, we studied the effect of n-3 PUFA dietary supplementation plus a lower dose of T3 against IR injury. Male Sprague-Dawley rats receiving fish oil (300 mg/kg) for 3 days followed by a single intraperitoneal dose of 0.05 mg T3/kg were subjected to 1 h of ischemia followed by 20 h of reperfusion. Parameters of liver injury (serum transaminases, histology) and oxidative stress (liver contents of GSH and oxidized proteins) were correlated with fatty acid composition, NF- κ B activity, and tumor ne