EFFECT OF CELECOXIB ON SPLENOMEGALY IN CIRRHOTIC RATS BASED ON TRANSCRIPTOMIC ANALYSIS

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Transcriptomic analysis in a rat model demonstrates that celecoxib attenuates cirrhotic splenomegaly by inhibiting splenic immune cell proliferation, inflammation, and fibrogenesis.

KEY POINTS

- RNA sequencing identified 1461 differentially expressed genes in cirrhotic rat spleens, with immune response and immune cell activation identified as major pathways in splenomegaly pathogenesis.
- Celecoxib treatment (20 mg/kg/day) ameliorated splenomegaly and liver cirrhosis in thioacetamide-induced cirrhotic rats through immunoregulatory effects.
- Pathway analyses of 304 coexisting differentially expressed genes suggested celecoxib acts by suppressing splenic immune cell proliferation, inflammation, immune regulation, and fibrogenesis.
- Validation studies demonstrated decreased splenic Ki-67-positive cells, macrophages, fibrotic areas, and mRNA levels of collagen III and α-SMA with celecoxib treatment.
- The findings support COX-2 inhibitors as a potential novel medical treatment for cirrhotic splenomegaly based on transcriptomic evidence from this rat model.

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