

Chronic Analgesic Use

Crone A-nail-Jay-Z

Chronic analgesic use, including acetaminophen and non-aspirin NSAIDs, is shown to increase renal cell carcinoma risk. It is expected that the metabolites of these drugs are carcinogenic, but more investigation is needed to understand its biological association. Other renal cell carcinoma risk factors may include hypertension and obesity.

Subtypes

Clear Cell

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Renal cell carcinoma can be classified based on its cell origin: clear cell, papillary, and chromophobic. Clear cell carcinoma arises from proximal renal tubules and can be found in 85% of cases. Gross findings include a sphere-like mass formed by golden-yellow tissue with focal hemorrhage and necrosis. Microscopic findings include polygonal cells with abundant clear cytoplasm and small nuclei.

Papillary

Paper

Papillary renal cell carcinoma arises from the distal tubular epithelium and is found in 10-15% of all renal cell carcinoma cases. Gross findings include a well-circumscribed and grayish-white mass with frequent hemorrhages and central necrosis. Microscopic findings are divided into two main subtypes. Both subtypes are characterized by papillae with a central fibrovascular core (true papillae) containing foamy histiocytes lined by a single layer of cells. Type 1: basophilic cytoplasm and Type 2: abundant eosinophilic cytoplasm.

Chromophobic

Chrome

Chromophobic renal cell carcinoma arises from intercalated cells of the collecting duct and is found in about 5% of all renal cell carcinoma cases. The tumor can be seen with one or more nodules with a lobulated surface. Microscopic findings are characterized by large, chromophobic polygonal cells which can be hard to differentiate from oncocytoma.