diagnosed with liver pathologies. These patients were seen in the gynecology and obstetrics service of the Hospital General de México between January 2023 and May 2024. The selection of the participants was based on their admission during the aforementioned period and the presence of a diagnosis of liver disease associated with pregnancy or under investigation. Data collection was carried out using forms designed for this purpose, through the review of the patients' clinical records, which classifies the source of information as secondary. Data analysis was performed using SPSS statistical software version 23. A descriptive approach was used for the analysis, presenting qualitative variables in terms of frequency and percentage, while measures of central tendency, such as mean and standard deviation, were calculated for quantitative variables.

Results: Data were collected from 72 files of pregnant patients who developed liver disease during pregnancy or liver pathology unrelated to pregnancy. The average age was 28.36, 28.36+-6.96 (26.75-29.97). 66.7% were multipregnant and 31.9% were primigravida. Regarding associated comorbidities, 59.7% did not present any comorbidity, while 40.3% presented some comorbidity, with subclinical hypothyroidism being the most frequent at 9.7%. Regarding nutritional status, 40.3% were obese, 6.9% overweight, and 27.8% normal weight. In the viral panel, 30.6% were non-reactive for HAV, HBV, and HCV, and up to 65.3% were not tested. Imaging studies showed the absence of intra- and extra-hepatic duct dilatation in 25%, on the other hand, 31.1% did not undergo imaging studies. The 87.5% presented some pathology related to pregnancy, the main ones being intrahepatic cholestasis (30.6%), preeclampsia with severe features (27.8%), HELLP syndrome (18.1%), and only 13.9% pathologies not related to pregnancy, the main ones being metabolic hepatic steatosis (5.6%) and viral hepatitis (2.8%).

Conclusions: In our study, liver pathology in pregnant women has similar characteristics to those reported in the world literature, with those related to pregnancy predominating over pre-existing pathologies. It should be emphasized that all pregnant women should be approached for such pathology and thus avoid complications in both mother and child.

Ethical statement: The research was conducted in accordance with the Helsinki Declaration (2013 revision).

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Characteristics	n=72		%
Sociodemographic			
Mean age (in years) (± SD)		28	7
Occupation	Unemployed	64	88.9
	Employee	8	11.1
Scholarship	primary	1	1.4
	Secondary	31	43.1
	Superior	40	55.6
Civil status	With partner	57	79.1
	Single	15	20.8
Comorbidities			
Subclinical hypothyroidism		6	9.7
Gestational diabetes		4	5.6
Gestational hypertension		6	8.3
Subclinical hypothyroidism + gestational diabetes		5	6.9
None		43	59.7
Nutritional condition			
Malnutrition		17	23.6
Overweight		5	6.9
Obesity		3. 4	47.2
Normal weight		5	27.8
Deeds			
Multiple pregnancies		48	66.7
First pregnancy		23	31.9
viral panel			
VHA		2	2.8
HCV		1	1.4
Non-reactive to HAV, HBV, HCV		22	30.6
Not performed		47	65.3
Image study			
Without dilation of the intra- and extra-hepatic pathway		18	25.0
Reactive cholecystitis without signs of exacerbation, without bile duct dilation		3	9.7
Not performed		31	43.1
Pathologies related to pregnancy n= 63 87. 5 %			
Hyperemesis gravidarum		6	8.3
intrahepatic cholestasis		22	30.6
Pre-eclampsia with severity data		20	27 . 8
Hellp syndrome		1 3	18.1
Eclampsia		1	1.4
Pregnancy fatty liver		1	1.4
Pathologies not related to pregnancy n=9 12.5%			
Hepatic cirrhosis		1	1.4
viral hepatitis		2	2.8
Probable autoimmune liver disease		1	1.4
Metabolic hepatic steatosis		4	5.6
Polycystic liver disease		1	1.4

DM, Diabetes mellitus; HAV, Hepatitis A virus; HBV, Hepatitis B virus; HCV, Hepatitis C virus.

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Chronic Administration of DEN and 2-AAF for 13 and 18 weeks in Wistar Rats Leads to Progress of Hepatocarcinogenesis

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Introduction and Objectives: Induction of hepatocellular carcinoma by administration of the agents diethylnitrosamine (DEN) and N-(2-Fluorenyl) acetamide (2-AAF) in murine animals, is a model to study liver cancer. The objective was to evaluate the alterations triggered by the chronic administration of DEN and 2-AAF during 13 and 18 weeks (wks.) in Wistar rats.

Materials and Patients: Male Wistar rats (180-200 g) were organized in groups: a) Control 18 wks. (18-wk Ctl; n=6); b) Damage 18 wks. (18-wk Dmg; n=8), c) Control 13 weeks. (13-wk Ctl; n=5), and d) Damage 13 wks. (13-wk Dmg; n=6). The 13- and 18-wk Dmg groups were weekly treated with i.p DEN (50 mg/Kg) on day one and with i. g. 2-AAF (25 mg/Kg) on day three; the treatment (Tx) was maintained over 13 and 18 weeks, respectively. Then, livers and serum were collected for histological, serum biochemistry, and gene expression analyses. Statistical test Student's t-tests or Kruskal-Wallis and

Mann-Whitney U were performed using the software GraphPad Prism version 8. A p value < 0.05 was considered significant.

Results: The rat's survival decreased to 62.5% with the Dmg Tx for the 18-wk Dmg group at the tenth week, but when the 13-wk Dmg group was included, the survival increased to 78.5% (n= 14) until the thirteenth week. Dmg Tx tended to decrease the animal's weight and induced changes in the liver tissue (paler coloration, differentiated nodules, and hepatomegaly; to a lesser degree in the 13-wk Dmg group). Heterogeneity in the damage severity was detected among the animals of both groups, which was also found at the histological level, where there were clear signals of loss of normal hepatocyte architecture, lobular structure disorder, atypical cell enhancement, and accumulation of collagen. Probable lung metastasis was recognized in the 18-wk Dmg group (indicated by macroscopic and histological alterations). In the Dmg groups, the levels of ALT, AST, ALKP, GGT, and total proteins in serum were significantly altered; as well as *CAT*, *SOD*, *COL1A*, and *TGFB1* expression were significantly different. In addition, *IL6* was also increased in the 18-wk Dmg group.

Conclusions: Dmg Tx during 13 wks. is sufficient to induce significant alterations and the 18-wk Tx exhibited possible lung metastasis. The heterogeneity in this model may be seen as a disadvantage; yet, this may be taken as a depiction of the heterogeneity found in liver cancer patients in real life.

Ethical statement: The study protocol (code CI-01720) was approved by the Ethics, Research, and Biosecurity Committee of the CUCS, Universidad de Guadalajara on 20 October 2020.

Declaration of interests: None.

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Primary Hepatic Lymphoma Associated with HIV, Case Report.

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Introduction and Objectives: Primary liver lymphoma (PLL) is a rare form of lymphoma. It represents 1% of all non-Hodgkin lymphomas and 0.4% of extra nodal lymphomas. Risk factors include infection with human immunodeficiency virus (HIV), hepatitis B and C, as well as chronic immunosuppression. Here, we present a case of PLL.

Materials and Patients: A 39-year-old male with HIV infection and recently diagnosed disseminated Kaposi's sarcoma was admitted due to abdominal pain, asthenia, adynamia, and a 10 kg weight loss. Physical examination revealed a painful abdomen, hepatomegaly of 3 cm below the costal margin, and no other abnormalities. An exophytic, violaceous palatine tumor was observed in the oral cavity. Laboratory studies showed: total bilirubin 1.3, direct bilirubin 1, aspartate aminotransferase 23, Alanine transaminase 20, alkaline phosphatase 519, Gamma-glutamyltransferase 392, lactate dehydrogenase 271. A CT scan reported multiple hypodense oval images in hepatic segments III to VIII with a hypodense center in the contrast phase and ring enhancement; an amorphous, irregularly bordered mass occupying the soft palate extending to the nasal cavity; no splenomegaly or lymphadenopathies. An ultrasound-guided liver biopsy revealed lymphocyte proliferation with severe atypia consistent with lymphoma, which immunohistochemistry confirmed as diffuse large B-cell lymphoma of germinal center origin with a double-expressor immunophenotype (C-MYC > 40%, BCL2 > 50%). A biopsy of the palatal lesion reported ulcerated Kaposi's sarcoma. Endoscopy and colonoscopy showed circumscribed mucosal elevations in the cecum and stomach; histopathology reported Kaposi's sarcoma.

Results: Extension studies were conducted with serology for hepatitis B and C viruses and cytomegalovirus, all of which returned negative results. The bone marrow biopsy showed no lymphomatous infiltration, and the lumbar puncture revealed no abnormalities. The dissemination study with computed tomography of the chest, abdomen, and pelvis did not reveal findings suggestive of supradiaphragmatic or infradiaphragmatic involvement. The diagnosis of primary hepatic double-expressor lymphoma was concluded, synchronous with diffuse Kaposi's sarcoma. Antiretroviral therapy was initiated for 2 weeks, followed by the first cycle of chemotherapy with the EPOCH-DA regimen. The patient experienced progressive deterioration that ultimately led to his death.

Conclusions: LHP is an uncommon entity, just as Kaposi's sarcoma are common neoplasms associated with HIV and immunodeficiencies. Synchronous presentation is poorly documented, with only isolated cases reported in the literature. Therefore, it is important to conduct a comprehensive approach for the identification and timely management of these conditions

Ethical statement: The patient's identity was protected, and consent was obtained from family members.

Declaration of interests: None

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or non-profit sectors.

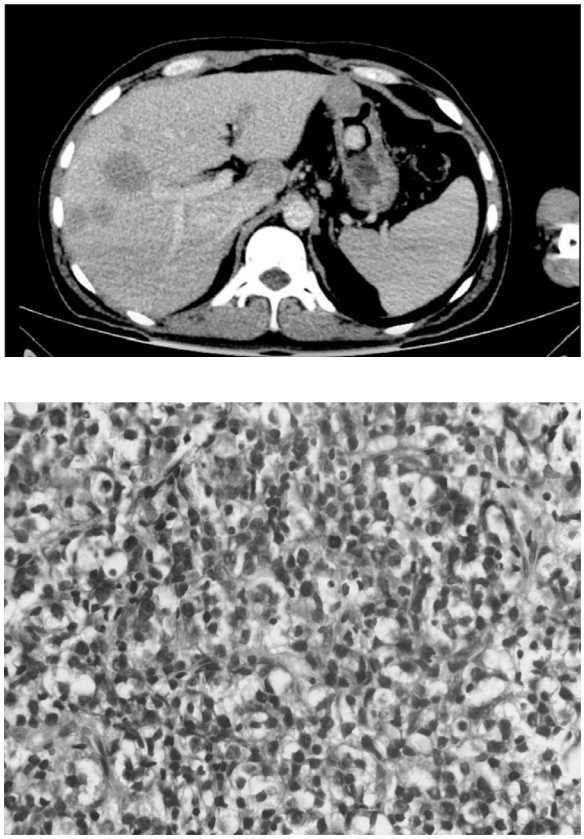

Figure.

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