

MEDICAL GRAND ROUNDS

PARKLAND MEMORIAL HOSPITAL

October 22, 1964

LIVER DISEASE IN PREGNANCY

1. Liver Size in Human Pregnancy.

Sheehan, H.L. Am. J. Obst. Gynec. 81:427, 1961.
Average 1770 gm - 90 women.

Parkland Memorial Hospital
Average 1700 gm - no difference early or late pregnancy.

Conclusion - about same size as in nonpregnant women, no increase in size of note during pregnancy.

2. Histology - Based on needle biopsies of liver.

Ingerslev, M. and Teilum, G. Acta Obst. et Gynec. 25:352, 1946.
Seventeen normal pregnant women at term - no definite deviation from findings in normals.

Nixon, W.C.W., et al. J. Obst. Gynec. Brit. Emp. 54:642, 1947.
Nine pregnant women - not normal pregnancies - various illnesses, not primarily hepatic. Normal liver structure with minor histologic deviations such as difference in shape of liver cells with increase in number of large nuclei, irregularities of nuclei, increased glycogen in cytoplasm.

Antia, F.P., et al. Lancet 2:776, 1958.
Ten normal pregnant women - no significant deviation from normal. Occasionally slight RE hyperplasia.

Adams, R.H. Unpublished.
No significant deviation from normal.

3. Hepatic Blood Flow.

Munnell, E.W. Obst. Gynec. Survey 3:758, 1948.
Hepatic vein catheterization, BSP method.

	ml/min/1.73M ²	% of Total Blood Volume
15 nonpregnant women	1548	35
Pregnant		
4 - 1st trimester	1803	32.8
3 - 2nd trimester	1600	32.8
8 - 3rd trimester	1413	24.8

4. Liver Function Tests

Serum Bilirubin - no significant change.

- Cantarow, A., et al. Am. J. Obst. Gynec. 29:36, 1935.
Dieckmann, W.J., et al. Surg. Gyn. Obst. 92:598, 1951.
Thorling, L. Acta Med. Scand. Suppl. 302, 1955.
Antia, F.P., et al. Lancet 2:776, 1958.
Wetstone, H.J., et al. Am. J. Obst. Gynec. 76:480, 1958.
McNair, R. and Jaynes, R.V. Am. J. Obst. Gynec. 80:500, 1960.
Kessler, W.B. Obst. Gynec. 23:372, 1964.
Adams, R.H. Unpublished observations.

Bilirubin Tolerance Test - impaired during second half of pregnancy.

- Soffer, L.J. Bull. Johns Hopkins Hosp. 52:365, 1933.

Thymol Turbidity - Cephalin-Cholesterol Flocculation

Not significantly different from normal nonpregnant group. Occasional person has elevated value.

- Christhilf, S.M. and Bosnes, R.W. Am. J. Obst. Gynec. 59:1100, 1950.
Dieckmann, W.J., et al. Surg. Gyn. Obst. 92:598, 1951.
_____, Am. J. Obst. Gynec. 68:1581, 1954.
(Thorling; Wetstone; Antia; McNair; Kessler; and Adams.)

Alkaline Phosphatase - increased in latter part of pregnancy.

Values up to 13 Bodansky Units - 42 per cent greater than 5 in 8th month.

King-Armstrong (4-10 normal range) 39/59 exceeded normal within 3 weeks of term.

- Lee, A.B. and Lewis, P.L. Am. J. Obst. Gynec. 87:1071, 1963.
Speert, H., et al. Am. J. Obst. Gynec. 59:148, 1950.
(Thorling; Wetstone; McNair; and Kessler.)

Leucine Aminopeptidase - Serum level gradually increases; reaching peak levels prior to term. Returns to normal nonpregnant levels by 6-8 weeks post partum.

- Arst, H.E., et al. Am. J. Med. Sci. 238:598, 1959.
Siegel, I.A. Obst. Gynec. 14:488, 1959.

Serum Cholesterol and Cholesterol Esters - progressive increase during pregnancy. Fifty per cent of women have total cholesterol greater than 250 mg% in last trimester. Percentage of esters - no change.

Smith, E.K., et al. Am. J. Obst. Gynec. 77:326, 1959.

(Wetstone; and McNair.)

BSP Test - 45 minute retention - usually normal during pregnancy. Occasional patient 5-10 per cent retention at 45 minutes in latter part of pregnancy.

Freiheit, J.M. Am. J. Obst. Gynec. 23:797, 1932.

(Cantarow; Christhilf; and Adams.)

Almost 80 per cent, greater than 5 per cent retention during labor, average 9.1 per cent.

Smith, B., et al. Anesthesia Analgesia 41:24, 1962.

BSP Removal Mechanisms in Pregnancy

Hepatic storage capacity increases 122 per cent and maximal excretory rate into bile decreases 27 per cent in latter half of pregnancy.

Combes, B., Adams, R.H., et al. J. Clin. Invest. 42:1431, 1963.

SGOT, SGPT - normal values throughout pregnancy, labor and early post partum period.

Stone, M.L., et al. Am. J. Obst. Gynec. 80:104, 1960.

Theisen, R., et al. Obst. Gynec. 17:183, 1961.

Romalis, G. and Cloman, A.D. Am. J. Obst. Gynec. 84:1104, 1962.

(Adams, R.H.)

Obstructive Jaundice of Pregnancy

1. Thorling, L. Jaundice in pregnancy. Acta Med. Scand. Suppl. 302, 1955.
2. Svanborg, A. and Ohlsson, S. Recurrent jaundice of pregnancy. A study of twenty-two cases. Am. J. Med. 27:40, 1959.
3. Brown, D.F., Porta, E.A. and Reder, J. Idiopathic jaundice in pregnancy. Arch. Int. Med. 111:104, 1963.

Acute Fatty Metamorphosis of Pregnancy

1. Sheehan, H.L. The pathology of acute yellow atrophy and delayed chloroform poisoning. J. Obst. Gynec. Brit. Emp. 47:49, 1940.
2. Ober, W.B. and Le Compte, P.M. Acute fatty metamorphosis of the liver associated with pregnancy. Am. J. Med. 19:743, 1955.
3. Moore, H.C. Acute fatty liver of pregnancy. J. Obst. Gynec. Brit. Emp. 63:189, 1956.
4. Sheehan, H.L. Jaundice in pregnancy. Am. J. Obstet. Gynec. 81:427, 1961.
5. Kahil, M.E., Fred, H.L., Brown, H. and Davis, J.S. Acute fatty liver of pregnancy. Arch. Intern. Med. 113:63, 1964.
6. Schultz, J.C., Adamson, J.S. Jr., Workman, W.W. and Norman, T.D. Fatal liver disease after intravenous administration of tetracycline in high dosage. New Eng. J. Med. 269:999, 1963.
7. Whalley, P.J., Adams, R.H. and Combes, B. Tetracycline toxicity in pregnancy. Liver and pancreatic dysfunction. J. Am. Med. Assoc. 189:357, 1964.

Viral Hepatitis in Pregnancy

1. Zondek, B. and Bromberg, Y.M. Infectious hepatitis in pregnancy. J. Mt. Sinai Hosp. 14:222, 1947.
2. Ratnoff, O.D. and Mirick, G.S. Acute hepatitis in general hospital practice. The role of transfusions and inoculations. Bull. Johns Hopkins Hosp. 85:299, 1949.
3. Dill, L.V. Acute yellow atrophy of liver associated with pregnancy. Review of literature and 6 cases. Obst. and Gynec. Surv. 5:139, 1950.
4. Ingerslev, M. and Teilum, G. Jaundice during pregnancy. Acta Obst. Gynec. Scand. 31:74, 1951.
5. Mickal, A. Infectious hepatitis in pregnancy. Am. J. Obst. and Gynec. 62:409, 1951.
6. Hsia, D.Y., Taylor, R.G. and Gellis, S.S. A long-term follow-up study of infectious hepatitis during pregnancy. J. Pediatrics 41:13, 1952.
7. Wahi, P.N. and Arora, M.M. Epidemic hepatitis. New Eng. J. Med. 248:451, 1953.
8. Roth, L.G. Infectious hepatitis in pregnancy. Am. J. Med. Sci. 225:139, 1953.
9. Frucht, H.L. and Metcalfe, J. Mortality and late results of infectious hepatitis in pregnant women. New Eng. J. Med. 251:1094, 1954.

10. Long, J.S., Boysen, H. and Priest, F.O. Infectious hepatitis and pregnancy. Am. J. Obst. Gynec. 70:282, 1955.
11. Thorling, L. Jaundice in pregnancy. A clinical study. Acta Med. Scand. Suppl. 302, 1955.
12. Naidu, S.S. and Viswanathan, R. Infectious hepatitis in pregnancy during Delhi epidemic. Indian Jour. Med. Res. Suppl. No. 45, 71, 1957.
13. Malkani, P.K. and Grewal, A.K. Observations on infectious hepatitis. Indian Jour. Med. Res. Suppl. No. 45, 77, 1957.
14. Vincent, C.R. Jaundice in pregnancy. Obst. and Gynec. 2:595, 1957.
15. Peretz, A., Paldi, E., Brandstaedter, S. and Barzilai, D. Infectious hepatitis in pregnancy. Obst. and Gynec. 14:435, 1959.
16. Dennig, von H., and Bruckmann, R. Viral hepatitis and pregnancy. Muenchen Med. Wschr. 103:1817, 1961.
17. Cahill, K.M. Hepatitis in pregnancy. Surg. Gynec. and Obst. 114:545, 1962.
18. Hammouda, A.A. Viral hepatitis during pregnancy. J. Obst. and Gynaec. Brit. Commonwealth 69:680, 1962.
19. Aterman, K. Neonatal hepatitis and its relation to viral hepatitis of mother. Am. J. Dis. Child. 105:395, 1963.