travenously antagonized the effect of morphine in a way similar to the results of Gruber, *et al.*

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Progestin and Estrin of Nineteen Placentas from Normal and Toxemic Cases.*

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The purpose of this study was to determine whether placentas from toxemic pregnancy differed significantly from those of non-toxemic pregnancy in content of progestin. Estrin was assayed coincidentally.

Within 48 hours of delivery the placentas, having been kept in the refrigerator, were cleaned of all membranes, drained and blotted, ground finely in a meat grinder, measured and vigorously shaken in 2 volumes of 95% ethyl alcohol, in which they remained until extraction. The methods of Allen[1, 2] were employed for extraction and of Allen and Meyer[3] for the separation of the estrogenic from the progestational fraction. For performing assays on the progestational fraction, which was taken up in olive oil, the Corner-Allen technique[4] was followed. In 6 instances (Nos. 1, 2, 3, 4, 8 and 9) 1/25th of the progestational fraction was removed and tested for estrogenic activity on 2 rats (Allen-Doisy method). Negative results were obtained, showing that these fractions contained definitely less than 50 r.u. of estrogenic substance. The 33% alcoholic estrogenic fractions were assayed directly, dilution, when necessary, being made with 33% ethyl alcohol. Clinical and biological data are tabulated in Table I. Table II summarizes the averages of the biological findings.

Only cases 4, 5, 12 and 18 may be regarded as truly normal pregnancies, the premature deliveries in the other "normals" being evidence of some upset in otherwise clinically normal pregnancies. Presumably the 3 patients whose membranes ruptured spontaneously were in other respects normally pregnant.

* The Mrs. William Lowell Putnam Investigation of the Toxemias of Pregnancy.

1 Allen, W. M., *Am. J. Physiol.*, 1930, **92**, 174.

2 Allen, W. M., *J. Biol. Chem.*, 1932, **98**, 591.

3 Allen, W. M., and Meyer, R. K., *Am. J. Physiol.*, 1933, **106**, 55.

4 Corner, G. W., and Allen, W. M., *Am. J. Physiol.*, 1929, **88**, 326.

TABLE I.
Clinical and Biological Data on Nineteen Placentas.

Patient No.	Diagnosis	Age	Parity	Week of Pregnancy	Type of Delivery	Volume of Placenta	Progestin*	Estrin	
						cc.		r.u.	r.u./cc.
1	Toxemia without convulsions	26	0	37	Spontaneous	180	0	380	2.10
2	" " "	34	3	31	Induced	160	++	230	1.43
3	"Normal"	20	0	32	Spontaneous	230	++	1130	4.91
4	Diabetes. Normal	30	1	38	Cesarean	400	++†	1500	3.75
5	Normal	25	0	Term	Spontaneous	300	0	1320	4.40
6	Toxemia without convulsions	29	2	36	Cesarean	300	+	1500	5.00
7	"Normal." Spontaneous rupture of membranes	35	2	35	Spontaneous	250	+	780	3.12
8	Diabetes. Mild toxemia	24	0	37	Cesarean	300	++	1160	3.86
9	Diabetes. Toxemia without convulsions	27	1	34	"	450	+++	1920	4.30
10	Toxemia without convulsions	28	6	36	Induced	285	+	610	2.40
11	Premature toxic separation	26	0	31	Spontaneous	75	0	390	5.20
12	Normal	34	0	Term	"	300	+++	1500	5.00
13	Premature toxic separation	26	0	36	Cesarean	190	++	116	0.61
14	Toxemia without convulsions	30	1	31	"	150	++++‡	390	2.60
15	"Normal"	20	0	32	Spontaneous	215	+++	1160	5.39
16	"Normal." Spontaneous rupture of membranes	27	1	32	"	170	+++±	580	3.41
17	"Normal"	21	1	29	"	175	++++	390	2.20
18	"	33	1	37	"	340	+++±	1170	3.40
19	"Normal." Spontaneous rupture of membranes	20	0	34	"	250	+++±	1670	6.60

* Willard M. Allen very kindly checked the readings on Nos. 1-13 and 15. Gregory Pincus very kindly checked all the readings
† With 3/5th of progestin fraction. ‡ This patient received 40 mg. progesterone during the 48 hours before delivery.

TABLE II.
Averages of Placental Progestin and Estrin of 9 Cases of Toxemia and 10 "Normals."

Progestin	*Toxemia*	*"Normal"*
0 to +	4	2
++ to ++++	5§	8
Estrin		
Total	941	1132
r.u./cc. wet vol.	3.2	4.3
Time of delivery		
Weeks early	5.7	5.0

§ One of these received 40 mg. of progesterone during the 48 hours before delivery.

Ehrhardt and Fischer-Wasels[5] found positive results for placental progestin in cases of eclampsia and pre-eclampsia but could draw, from quantitative comparisons, no conclusions as to possible etiology.

From the data presented in Table I it must be concluded that an absolute lack of progestin is not associated with either spontaneous delivery or late pregnancy toxemia. In neither of these situations, however, has the possibility of a relative deficiency of progestin been ruled out. The average figures in Table II indicate a somewhat lower content of progestin in the placentas from cases of toxemia, but the results may be considered no more than suggestive, considering the fact that the whole of each extract was tested on a single rabbit and that the method of extraction and assay may at best be considered only roughly quantitative.

The average figures for placental estrin show a tendency for low values in cases of toxemia, thereby confirming our previous findings.[6]

Conclusion. The placentas of late pregnancy toxemia cannot be shown by the methods available to differ significantly in content of progestin from those of non-toxemic pregnancy.

[5] Ehrhardt, K., and Fischer-Wasels, H., *Monatschr. f. Geburtsh. v. Gynäk.*, 1936, **102**, 80.

[6] Smith, G. V., and Smith, O. W., *Am. J. Obstet. and Gynec.*, 1937, **33**, 365.