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## Premenstrual Tension, Medicine and Law

Irwin N. Perr, M. D.\*

**T**HE PREMENSTRUAL TENSION SYNDROME is one characterized by emotional and physiologic symptoms occurring in the period preceding menstruation. A medical re-evaluation and description for the attorney may serve to clarify a subject full of misunderstandings, superstitions and false concepts.<sup>1</sup>

Premenstrual tension syndrome<sup>2</sup> (PTS) is cyclic, occurring one or two weeks prior to menstruation. PTS is characterized

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- <sup>1</sup> Frank, R. T., The Hormonal Causes of Premenstrual Tension. 26 Arch. Neurol. Psychiat. 1053 (1931);  
 Oleck, H., Legal Aspects of Premenstrual Tension. 166 Internat. Record Med. 492 (1953);  
 Stewart, N. L., Premenstrual Tension in Automobile Accidents. 6(1) Clev.-Mar. L. R. 17 (1957);  
 Stewart, N. L., Psychotic Aspects of Premenstrual Tension. 6(3) Clev.-Mar. L. R. 410 (1957).

Morton found 80% of women prisoners in a series of 249 volunteers showed elements of this syndrome. Eichner in a study of nurses found 70% had symptoms but only 6.5% requested or were willing to continue treatment; also that 50-75% of women showed this syndrome. Other studies indicate the percentage in all women was 67% (Israel), 50% (Freed), 30-40% (Suarez-Murias), 73% (Lamb), 40% (Rees), 95% (Pennington). In numerous studies of graphs of women the frequency of PTS run from 30% to 95% depending on the intensity and type of symptoms considered, the observer and the group observed.

- <sup>2</sup> Dalton, K., 2 Brit. Med. J. 1071 (1954);  
 Greene, R. and Dalton, K., Discussion on the Premenstrual Syndrome. 48 (5) Proc. R. Soc. Med., Lond. 337 (May, 1955).

Lamb, in a study of 127 student nurses showed that 73% had symptoms of PTS and that 61% had depressed feelings, irritability, or temper outbursts. Suarez-Murias in a study of 107 student nurses found that 85.1% had one or more symptoms frequently or occasionally, 28.9% showed tension, 11% had frequent tension, irritability and depression, only 4% had had no symptoms. In his private practice group of 100 patients, 42 had premenstrual tension, 4 had post-menstrual tension, and 5 mid-menstrual tension. Greene and Dalton found that in 84 cases, 70 occurred in the premenstrual week, 9 at the onset of menstruation, and 1 at ovulation (3 had symptoms both at menstruation and at ovulation). On the basis of this, they felt that the name "premenstrual" was not entirely accurate. This also raises the question of the relationship of symptoms to physiologic changes and whether some cases included in the literature belong in this category.

by various physiologic and psychologic changes terminated by the menstrual flow and is a symptom complex of anxiety, headache, insomnia, emotional instability, fatigue, painful swelling of the breasts, abdominal bloating, and low abdominal pain.<sup>3</sup> Various combinations of these symptoms may be present. The emotional symptoms often are the most striking. In descriptions of premenstrual tension, words like anxiety, tension, depression and irritability are used in their extremely broad meanings. Since no individual is immune to any of these feelings, the intensity of the symptoms is of greater importance than the symptom itself (See footnote 2). As an example, the word *neurotic* can be used generically to apply to many universal emotional symptoms. It can also be used in a more specific diagnostic sense as in psychiatry. The word *depression* likewise can refer to periodic feelings of sadness and blueness. It can also be used more specifically to refer to the profound depression requiring treatment. The words used here describing PTS are used in their broad sense.

### Frequency of This Syndrome

Most women exhibit, in some degree, the various elements of premenstrual tension.<sup>4</sup> Inasmuch as they are basic physiologic processes, it is difficult to say who has this condition and, if pres-

<sup>3</sup> Morton, J. H., *Premenstrual Tension*. 60 *Am. J. Obst. and Gynec.* 343 (1950);

Rees, L., *The Premenstrual Tension Syndrome and its Treatment*. 1 *Brit. M. J.* 1014 (1953);

Greene, R. and Dalton, K., *The Premenstrual Syndrome*. 1 *Brit. Med. J.* 1007 (1953).

Dalton in making a diagnosis said that the criteria are: (1) the symptoms must be present in each of the three previous cycles, (2) the symptoms are severe enough to demand medical advice or relief and (3) occurrence at a specific phase of the menstrual cycle.

<sup>4</sup> Morton, J. H., Addison, J., Addison, R. G., Hunt, L. and Sullivan, J. J., *A Clinical Study of Premenstrual Tension*. 65 *Am. J. Obstet. and Gynec.* 1182 (1953);

Eichner, E., *Premenstrual Tension Syndrome*. Presentation at N. Y. S. Academy of General Practice (Oct. 1957);

Eichner, E. and Waltner, C., *Premenstrual Tension*. 83 (8) *Medical Times* 771 (Aug. 1955);

Israel, S. L., *The Clinical Pattern and Etiology of Premenstrual Tension*. 166 *Internat. Record Med.* 463 (1953);

Freed, S. C., 166 *International Record Med.* 465 (1953);

Suarez-Murias, E. L., *The Psychophysiologic Syndrome of Premenstrual Tension with Emphasis on the Psychiatric Aspect*. 166 *Internat. Record Med.* 457 (1953);

Lamb, W. M., Ulett, G. A., Masters, W. H. and Robinson, D. W., *Premenstrual Tension: E. E. G., Hormonal and Psychiatric Evaluation*. 109 *Am. J. Psychiatry* 841 (1952-53);

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ent, whether the condition is pathologic. In numerous studies of groups of women, the frequency of PTS ran from 30% to 95% depending upon the standards of intensity of symptoms, the type of symptoms, the observer, and the group studied.

TABLE 1  
SYMPTOMS FOUND IN THE PREMENSTRUAL SYNDROME

| No. of cases        | Greene and Dalton | Rees | Eichner and Waltner | Eichner and Waltner |
|---------------------|-------------------|------|---------------------|---------------------|
|                     | 84 PTS            | PTS  | Normal subjects     | PTS                 |
| PERCENTAGE          |                   |      |                     |                     |
| Headache            | 69.5              | 63   |                     |                     |
| Nausea              | 29.7              | 37   |                     |                     |
| Lethargy (fatigue)  | 13.1              | 63   | 59                  |                     |
| Rheumatism          | 16.7              |      |                     |                     |
| Vertigo             | 10.6              |      |                     |                     |
| Depression          | 6.0               | 80   | 62                  |                     |
| Irritability        | 6.0               | 100  | 51                  |                     |
| Edema (congestion)  | 6.0               | 73   | 32                  | 72                  |
| Rhinorrhea          | 7.2               |      |                     |                     |
| Mastalgia           | 2.4               | 63   | 69                  |                     |
| Tension             |                   | 100  | 39                  |                     |
| Emotional lability  |                   |      |                     | 56                  |
| Anxiety             |                   | 73   |                     |                     |
| Insomnia            |                   | 40   |                     |                     |
| Pruritus            |                   | 40   |                     |                     |
| Marked thirst       |                   | 20   |                     |                     |
| Physical discomfort |                   |      |                     | 58                  |

### Symptoms

The incidence of the individual symptoms varied widely (Table 1). The groups studied were either normal women or

(Continued from preceding page)

Rees, L., Psychosomatic Aspects of the Premenstrual Tension Syndrome. 99 *J. Ment. Science* 62 (1953);

Pennington, V. M., Meprobamate in Premenstrual Tension. *J. A. M. A.* (June 8, 1957).

Lamb et al. state: "It is also known that the symptoms of premenstrual tension cannot be accounted for on the basis of generalized water retention alone, inasmuch as some women with severe symptoms show no clinical evidence of this; edema occurring as part of other pathological processes is not associated with these symptoms; and there is alteration of water metabolism in normal controls." Rees comments, "Dehydration did not often counter symptoms of nervous tension, irritability, depression and anxiety. This suggests that hydration is not responsible for all the symptoms of the syndrome." It has also been observed that women often develop symptoms of hydration in midperiod without the emotional symptoms and also that sometimes, the nervous tension may disappear at the onset of menses even if hydration continues for several days (Rees). Eichner in a later paper entitled "The Premenstrual Tension Syndrome—Fact or Fancy?" states, "Adequate diuresis does not completely cure nor does it prevent this disability." Freed and Greenhill (1940) postulated that neurologic symptoms were due to edema of the nervous system, but Greenhill, editor of the "Year Book of Obstetrics and Gynecology," 1955-1956 series, states that proof of this hypothesis is lacking.

women who were under treatment for PTS. It is difficult to define normal or acceptable discomfort incident to menstruation. Among the usual symptoms are headache, nausea, lethargy, rheumatism, vertigo, depression, irritability, edema, mastalgia, anxiety and insomnia. The less common complaints are low back pain, and increased tendency to migraine, asthma, and epilepsy. Weight gain reflects the edema and congestion. Despite the vast variety of symptoms described, most are very mild in degree. Irritability and tension are the most annoying, causing women to be more difficult to live with or tolerate. The suffering and discomfort of these patients are reflected in their social, domestic and economic world. (See footnote 3.) Numerous reports mention the emotion disorders, behaviour problems, and criminal activities occurring at this period. It has been reported that most of the crimes committed by women in Paris occur premenstrually.<sup>5</sup>

<sup>5</sup> Cooke, W. R., *The Differential Psychology of the American Woman*. 49 *Am. J. Obstet. and Gynec.* 457 (1945).

Rees states, "The general weight of evidence appears to be in favour of the hypothesis that the premenstrual tension state is associated with low progesterone and high levels of unantagonized estrogen." Excess estrogens or estrogens unantagonized by progesterone have been commonly accepted as a basic part of the process (Greenhill and Freed, Ufer, Morton, etc.). Greene and Dalton feel that it is the estrogen-progesterone ratio which determines whether or not symptoms occur. Thus, progesterone is often used in treatment, although Gillman could produce symptoms with progesterone probably because of its water retention effect.

There are many findings yet to be clarified in the literature. Lamb in a careful study of 5 cases of PTS and 5 controls found the "endocrine activity within normal limits in all subjects with no demonstrable distinction between subjects with premenstrual tension and controls."

Because of the relationship of the findings with the previous discussion, some of the laboratory findings will be evaluated here before going into the question of carbohydrate metabolism. Morton did thorough testing on a group of these patients. He utilized vaginal smears, basal temperatures, and endometrial biopsies as well as urinary hormonal assays. These findings were consistent with anovulatory menstruation, that is, no ovulation took place during the cycle. The endometrial biopsy in 22 or 23 patients showed proliferative or hyperplastic or mixed proliferative and luteal pictures, rather than the usual secretory type. The usual midcycle rise in temperature associated with ovulation did not occur. Urinary hormones showed a subnormal pregnandiol excretion. Three of four of Israel's cases showed similar endometrial findings indicating pseudomenstruation. Mukherjee found anovulatory menstruation in 51% of his cases.

The primary findings above indicate anovulatory cycles. Yet the more commonly accepted theory is that premenstrual tension is associated with ovulation and should not be found otherwise. According to Rosenblum and other members of the Staff of Western Reserve University, estrogen levels do not rise in anovulatory cycles as they do in ovulatory cycles. Greenblatt states: "one idea which finds general acceptance is that menstrual molimina occurs as a forerunner of ovulatory menstruation and is not associated with anovulatory menses." Bickers and Woods found a well developed secretory phase on endometrial biopsy and state, "It appears the symptoms occur

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In a report of a study at the New York State Farm for women prisoners, 62% of the crimes of violence occurred in the premenstrual week and 17% occurred during menstruation.<sup>6</sup>

### Etiology and Physiology

Since the causes of PTS are quite complex, a basic knowledge of endocrinology, physiology and psychodynamics is required. In 1931,<sup>7</sup> it was postulated that PTS was caused by a retention of estrogenic hormone—a secretion of the ovary. At one time, the syndrome was thought to be a menstrual toxin. The psychic theories of causation are not generally accepted. Allergic reactions<sup>8</sup> and vitamin deficiencies have been mentioned but find little support.

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only in those patients who ovulate and who have active corpus luteum function." These tests are briefly mentioned in view of the statement by Stewart that premenstrual tension can be verified by the above tests. In general, these tests indicate the presence of ovulation and seemingly have not been correlated by others to the syndrome under discussion.

<sup>6</sup> Morton, J. H., Additon, J., Addison, R. G., Hunt, L. and Sullivan, J. J., A Clinical Study of Premenstrual Tension. 65 Am. J. Obstet. and Gynec. 1182 (1953).

Suarez-Murias gives as a typical example of a fasting blood sugar the following readings—107 mg. % at mid-interval, levels of 94, 90, 88, 82 on successive days prior to menstruation and 104 mg. % post menstrually.

<sup>7</sup> Frank, R. T., The Hormonal Causes of Premenstrual Tension. 26 Arch. Neurol. Psychiat. 1053 (1931).

Morton reports that in 16 of 23 cases, there was an increased glucose tolerance. Ordinarily speaking, in a glucose tolerance test, the individual is given a large amount of sugar to take at one time, and then blood sugar levels are tested over several hours. Usually there is a sharp rise and in a few hours, a drop to below normal levels and then a return to normal. There is considerable variation within the normal range. A curve often found in premenstrual tension is one which is flattened or a "plateau curve." A typical finding of Morton was 90 mg. % at the start, 125 at ½ hour, 104 at 1 hour, 90 at 2 hours, 80 at 3 hours and 74 at 4 hours. This curve does not indicate hypoglycemia; it indicates a lower level of functioning. Thus, Morton states that these patients show a "subclinical hypoglycemia." He further states that the fasting blood sugars were normal or slightly lowered.

<sup>8</sup> Wahlen, T., Endocrine Allergy. 34(2) Acta obst. gyn. Scand. 161-70 (1955);

Cazzola, 9 Rev. obst. e. ginec. 509 (Aug. 1954).

Certain of the symptoms of the premenstrual syndrome may be related to lower blood sugar in some patients—increased appetite, fatigue, weakness, sweating, tremulousness, etc. The question of hypoglycemia was discussed by Rennie and Howard. (4 Psychosomatic Medicine 273—1942). They found such curves very common in personality disorders and that when the personality disorder was corrected, there was a change in the curve to the more usual levels. They state: "It has been our impression that this hypoglycemia during a glucose tolerance test in otherwise normal persons is more common in those of asthenic habitus and of rather tense personality pattern."

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One basic change in the body during the premenstrual period is electrolyte imbalance. Sodium retention causes the retention of water<sup>9</sup> resulting in edema, weight gain, swelling of the breasts and abdominal discomfort. To some authorities, this is the basic process present. However, emotional symptoms and behavior changes do not usually result from water retention. Many other illnesses are characterized by water retention but do not exhibit emotional changes. Treatment of this edema often does not relieve the specific symptoms. (See footnote 4.)

The endocrine causes are vastly more complicated as the functions of the various endocrine glands are interrelated.

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Thus, lowered blood sugar curves are common findings in various situations. Sugar levels have been studied at length as they are reflections often of emotional processes. Whitehorn (90 Am. J. Psych. 987—1934) found no cases of hyperglycemia in 958 mental patients, but 44 had sugar levels below 80%. It is in keeping with Selye's work on adaptation to stress to expect to find lower glucose tolerance curves. Suarez-Murias states that "the plateau type of sugar tolerance curve might be considered to be incidental to tension and depression or sustained stress." Alexander and Portis reported on hypoglycemic fatigue and found similar and lower-glucose tolerance curves in a variety of personality types, both male and female.

Bickers, W. and Woods, M., *Premenstrual Tension*. 245 N. E. J. Medicine 453 (1951);

Pellanda, 10 Rev. med. Rio Grande do Sul (1954);

Freed, S. C. and Greenhill, T. P., 26 Endocrinology 529 (1940);

Greenhill, J. P., *Yearbook of Obstetrics and Gynecology—1955-1956 series*, p. 501, The Year Book Publishers, Chicago, 1955.

<sup>9</sup> Women who have a fear of becoming pregnant often have severe premenstrual tension. Lamb reported that there is no indication that the behavioral manifestations of premenstrual tension reflect directly alterations in the cranial neurophysiology, so measured, and also that "there appeared to be some definable differences in behavior other than the premenstrual manifestations differentiating the two groups. The subjects with premenstrual tension showed more marked emotional liability throughout the cycles, and in general were less assertive individuals." Suarez-Murias states that "The psychologic aspect of premenstrual tension seems related largely to the manner in which the patient accepts psychically the menstrual function and also to the manner in which the patient unconsciously utilizes the menstrual function to express distress about pressing environment situations of life, difficult interpersonal relationships, or about her own attitude concerning being a woman, or even about the fact of existence." He feels that personality type and environmental setting are the real factors in the psychologic manifestations of premenstrual tension. Israel states, "Irrespective of the exacting mechanism, it cannot be denied; because of the nature of the symptoms, that emotional disturbances and psychogenic traumata not only aggravate the symptoms, but evoke additional ones." The independence of the psychiatric symptoms from the physiologic symptoms are commented on by Greene and Dalton "At times of stress, symptoms become unbearable and of increased severity, whilst when life flows along like a song, the symptoms decrease or may pass by unnoticed." Veit comments that premenstrual tension is often encountered in psychiatric conditions, especially in hysterical personalities.

Ovarian hormones account for changes in the breasts as well as in the uterus. These hormones also increase water retention.<sup>10</sup> PTS might therefore be due to an excess of estrogen.<sup>11</sup> (See footnote 5.)

The blood sugar level declines in the several days prior to menstruation. It returns to more normal levels shortly after the onset of the flow. These changes in the carbohydrate metabolism have been referred to as "hypoglycemia," "relative hypoglycemia," and "subclinical hypoglycemia." However, hypoglycemia per se has not been reported, and the terms "relative" and "subclinical" indicate changes within basically normal limits. The drop of blood sugar in the premenstrual period is within the normal blood sugar range. (See footnote 6.) No detailed reports of definite hypoglycemia fasting blood sugars during the premenstrual phase have been found.

In a glucose tolerance test, the individual is given a large amount of sugar to take at one time. The blood sugar levels are tested over several hours. Usually there is a sharp rise in blood sugar. In a few hours, a fall to below normal levels occurs and then a return to normal. In some cases, the rise is small and flattened ("plateau curve"), and the lessened response indicates "increased glucose tolerance" which is of little clinical signifi-

<sup>10</sup> Greene, R. and Dalton, K., *The Premenstrual Syndrome*. 1 *Brit. Med. J.* 1007 (1953).

Allen and Henry studied the menstrual pattern in 100 psychiatric patients and in general showed many variations but in no consistent pattern. Hypomanic patients sometimes showed more profuse menses, and severe depressions scanty menses. These findings, of course, have little to do with the disease itself. Gregory states, "In fact, it is more probable that the endocrine changes in psychotics are a sequel to, rather than a causative factor in their illness." Stracham and Skottowe showed that psychiatric patients showed menstrual abnormality more than gynecological patients but that those abnormalities were not considerable. They noted that 19% of a group of mostly schizophrenic patients showed exacerbations of symptoms at the menstrual period (not the premenstrual period). Suarez-Murias found 48% of a group of 40 women in a mental institution had PTS, but only 11.2% of a group without mental disturbances.

<sup>11</sup> Israel, S. L., *Premenstrual Tension*. 110 *J. A. M. A.* 1721 (1938); Greenhill, T. P. and Freed, S. C., 17 *J. A. M. A.* 504 (1941); Ufer, 14 *Geburtsh. u. Frauenh.* 733 (Aug. 1954); Gillman, J., 2 *J. Clin. Endocrinol.* 157 (1942); Mukherjee, 24 *J. Indian M. A.* 81 (1954); Rosenblum, J., *Personal Communication*; Greenblatt, R., *Premenstrual Tension Syndrome*. 11(3) *GP* 66 (Mar. 1955).

An example of the type of case reported is that of Knaus as noted by Gregory. He described a schizophrenic woman who became markedly psychotic with each premenstrual period. Williams and Weekes reported on 16 cases with psychotic episodes during the premenstrual period. These episodes resembled either manic forms of manic-depressive psychosis or the catatonic form of schizophrenia.



cance except to rule out greater extremes. The reports of increased glucose tolerance indicate a relative lowering of the sugar metabolic level. (See footnote 7.) These findings are extremely nonspecific, and would not account for emotional or behavioral symptoms. (See footnote 8.) The ordinary criteria for a diagnosis of hypoglycemia would demand much lower sugar levels. Subclinical hypoglycemia might be a reflection of many different states. It is not a cause of these states, and usually the accompanying symptoms are mild.<sup>12</sup> One would expect other clinical conditions to be present if hypoglycemia were encountered in a case of premenstrual tension.

### Psychiatric Correlates

Bodily changes account for most of the symptoms of PTS, but the patient's reaction is determined by constitutional factors such as the stability of the autonomic nervous system, homeostatic mechanisms and the personality type. The degree of general stability depends upon general life adjustment, personality reaction and incidence of neurotic and personality disorders. Neurosis or emotional instability in itself does not cause the syndrome. Many neurotics do not have these symptoms. Those neurotics that have PTS follow the general rule that the more severe the neurosis, the greater is the intensity of the premenstrual tension symptoms. Since this syndrome is primarily physiologic, women with little or no neurosis can have some of these symptoms quite severely, but these would be expected to be more of the physiologic type of symptom. (See footnote 9.)

The emotional reactions depend on the personality and not upon the stress. (Table 2).<sup>13</sup> The premenstrual syndrome is a physiologic stress of mild degree occurring in all women. The individual's equilibrium is affected and the woman may experience various unpleasant bodily feelings. Any emotional symp-

<sup>12</sup> Rennie, T. A. C. and Howard, J. E., Hypoglycemia and Tension—Depression. 4 *Psychosom. Med.* 273 (1942);

Whitehorn, J. C., The Blood Sugar in relation to Emotional Reactions. 90 *Am. J. Psych.* 987 (1934);

Alexander, F. and French, T. M., *Studies in Psychosomatic Medicine*, 359, The Ronald Press Co., N. Y. (1948).

<sup>13</sup> Benedek, T. and Rubenstein, B. B., The Correlation between Ovarian Activity and Psychodynamic Processes: I. The Ovulative Phase, 1 *Psychosomatic Medicine* 245 (1936);

Benedek, T. and Rubenstein, B. B., The Correlation between Ovarian Activity and Psychodynamic Processes: II. The Menstrual Phase, 1 *Psychosomatic Medicine* 461 (1936);

Veit, H., Psychosomatic Aspects of Premenstrual Tension. 54(11) *Wisc. Medical J.* 599 (Dec. 1955).

TABLE 2 (Rees)  
INCIDENCE OF PREMENSTRUAL TENSION IN  
NORMALS AND NEUROTICS

| <u>Degree of Tension</u> | <u>61 Normals</u> | <u>84 Neurotics</u> |
|--------------------------|-------------------|---------------------|
| None                     | 78.7%             | 38%                 |
| Moderate                 | 16.4              | 30                  |
| Severe                   | 5                 | 32                  |

THE INCIDENCE OF PREMENSTRUAL TENSION RELATED  
TO DEGREE OF NEUROTIC CONSTITUTION

| <u>Degree of<br/>Neurotic Constitution</u> | <u>Degree of Premenstrual Tension</u> |                 |               |
|--|---------------------------------------|-----------------|---------------|
|  | <u>Nil or Mild</u>                    | <u>Moderate</u> | <u>Severe</u> |
| Nil  | 76%                                   | 17%             | 7%            |
| Mild                                       | 56                                    | 36              | 8             |
| Severe                                     | 15                                    | 48              | 37            |

toms, especially the neurotic variety, are aggravated during this period. The same individual may show the same emotional symptoms under other stress, i.e., domestic difficulties, illness of a husband, etc. In general, emotional reactions and behavior would correlate with the basic personality type rather than with the endocrine changes themselves. Impulsive-hysterical individuals, individuals with antisocial personalities and other personality disorders, etc., would be expected to get into behavioral difficulties more during this period than otherwise. Since the endocrine system can reflect mental conditions, variations in the menstrual pattern of women have long been found. (Footnote 10.)<sup>14</sup> It has been a common observation that many psychotics, especially schizophrenics, show exacerbations of symptoms during the premenstrual period and easing off with onset of bleeding. One would not be likely to find an individual who has premenstrual psychoses with no basic psychotic personality.<sup>15</sup> (See footnote 11.)

Certain bizarre manifestations, including psychotic episodes and epileptiform seizures, have been attributed to premenstrual

<sup>14</sup> Allen, E. A. and Henry, G. W., *The Relation of Menstruation to Personality Disorders*. 13 *American Journal of Psychiatry* 239 (1933); Gregory, B. A. J. C., *The Menstrual Cycle and its disorders in psychiatric patients: I. Review of the Literature*. 2(1) *J. Psychosom. Research* 61 (1957); Strachan, G. I. and Skottowe, I., *Menstruation and The Menopause in Mental Disease*. 7 *Lancet* 1058 (1933); Suarez-Murias, E. L., 5 *Arch. med. Cuba* 286 (1954).

<sup>15</sup> Knaus, H., *Menstruellerzyklus und psychosen*. 78 *Schweiz. med. Wschr.* 1016 (1948); Williams, E. Y. and Weekes, L. R., *Premenstrual Tension Associated with Psychotic Episodes—Preliminary Report* 116 *J. Nerv. & Ment. Dis.* 321 (1953).

tension, because they were observed to recur premenstrually. The woman who develops a psychotic episode, however brief, in the course of one of her customary bouts of premenstrual tension must not be assumed to be exhibiting merely psychologic manifestations of an emotionally disturbing illness. Such singular symptoms as evanescent psychotic episodes and epilepsy must be carefully scrutinized and the patient regarded as having a more serious illness than premenstrual tension. (Israel.) It is evident that the concept of menstrual psychosis can now be abandoned. No convincing evidence has ever been produced to show that such an entity exists. This view is now reflected in current textbooks of psychiatry and medicine. (Gregory.)

Thus, certain definite statements regarding PTS can be made. Emotional reactions are not correlated with the other physiologic changes in this syndrome. The premenstrual period is an aggravating one to women. Normal women become irritable; women with behavioral problems may become more irritable, and women with psychoses may become aggravated. These emotional changes cannot be attributed to edema or a toxic influence, such as might be found in bromide intoxication. Basically in PTS, a woman feels bloated; has a weight gain so that her clothes do not fit well; she has a headache and backache; she may feel nauseated, or has trouble sleeping, etc. It is a little wonder that a woman should feel more nervous, tense, anxious, depressed, and irritable. Yet this does not suggest a mental disease rendering such a woman incompetent. The cases actually showing severe mental changes are quite rare. Since psychosis in association with PTS is so rare, it can hardly be said that one causes the other.

### **Some Legal Aspects of Premenstrual Tension**

One legal author has stated,<sup>16</sup> "In terms of law, premenstrual tension with its periodic hypoglycemia is analogous to temporary insanity or incompetence with one critically important difference in the case of premenstrual tension, at least. Temporary incompetence or insanity is primarily a matter of subjective evidence, is very difficult to prove; and is easily subject to abuse as a rule of law. Premenstrual tension, on the other hand, may well be a matter of objective evidence, not too difficult to prove, if it exists, and can be verified by scientific tests after the event as well as before.

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<sup>16</sup> Oleck, n. 1, above.

"In contrast, therefore to the accepted mental conditions that exclude legal responsibility, as in the case of the insane criminal, the investigation of the causational aspects of crime in cases of premenstrual tension, should be based primarily on the medico-legal rather than the psychiatric criteria. These latter facts largely remove premenstrual tension from the legal area of subjective and emotional argument into the area of provable fact, subject to searching tests according to the established rules of evidence." Stewart echoes this view.<sup>17</sup> On the basis of the material presented in this paper, it can be seen that little information as yet can be found to support some of these conclusions. Some of these ideas may find application in evaluating a given case.

Laboratory tests have been of little use in premenstrual tension syndrome. The recognition of this syndrome depends on the intelligence of the patient, and her doctor. Actually, the diagnosis is not difficult. Of what importance is such a diagnosis? If there were a test for PTS, of what use would it be in legal circles by itself? Most of the female population have these same physiologic changes. Correlating behavior with tests such as a vaginal smear would have little significance. The emotional and behavioral aspects of this syndrome are ones requiring expert medical evaluation.

One test which might possibly be of some use is the evaluation of carbohydrate metabolism since a definite case of hypoglycemia could account for behavioral changes. Evaluation must be by a qualified physician. To demonstrate a clinical hypoglycemic state in PTS would be difficult. No cases have been reported thus far which would justify a diagnosis of hypoglycemia sufficient to cause temporary insanity. However, this possibility is not ruled out and this avenue might be explored. Certain specific symptoms should be encountered and certain specific blood findings should be obtained. Periodicity, a definite recurrent history, and other symptoms of PTS *might* correlate these findings.

The glucose tolerance test would have to show much lower levels than those described. Symptoms should be encountered during the test in accordance with the drop in sugar level. Numerous neurologic findings might be present. Perhaps such occurrences as transient hemiplegias, aphasias, mental confusion, incoherence, minor or major convulsive seizures, and periods of coma might be found. These symptoms should respond to

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<sup>17</sup> Stewart, n. 1, above.

glucose administration during the test. For practical purposes, and for the reasons mentioned, this avenue will probably be fruitless. In short, the laboratory findings might be of little help in a court of law, and the acknowledged presence of the syndrome itself of little value.

### Possibilities of Utilizing Present Concepts

Thus far, discussion has been spent in criticizing some comments about this syndrome and an attempt made to clarify ideas concerning it. As pointed out by Oleck and Stewart previously, this syndrome is one which has not been taken into account in the past as far as legal applications are concerned. It might be of help in evaluating certain cases. Mental disease involves changes in legal responsibility, and here mental changes are encountered. Individuals will be encountered with definite psychotic reactions in association with this period (though this is not common). On the basis of what is known, certain statements could be made about this. If a psychotic individual such as a schizophrenic has more severe symptomatology or exacerbations during this period, it can be more readily understood.

What about "temporary insanity"? Without going into a legal discussion of this concept, it can be seen that transitory "insane" reactions might be encountered. The lawyer would have to have sound medical advice in evaluating this problem. The idea of a single episode of "temporary insanity" unassociated with any other findings would be a doubtful one. The people who would show such reactions should exhibit a basically sick personality. A history of periodicity with similar symptoms during each premenstrual period must be proved. Thus, a woman might be shown to have had premenstrual paranoid episodes over a period of years. It would be expected that some supportive evidence should be found in previous medical records. Subsequent to the criminal act, careful psychiatric and psychologic examinations might show corroborative evidence. Finding endocrine evidence of premenstrual tension would not be corroborative. Thus far, psychiatric symptoms can be evaluated only by the usual inexact tools of the psychiatric sciences (tests such as alcohol levels or bromide levels are *not* available as yardsticks). In any question of mental responsibility, both gynecologic and psychiatric opinion would be of help.

If it is felt that the behavioral episode was due to a hypoglycemic reaction, evaluation would not be too difficult. As

Oleck states, evidence after the fact could be obtained. A history of periodicity and definitive glucose tolerance tests corroborate this evidence.

Evidence for temporary insanity would most likely be lacking and the individual held responsible in the absence of definite psychiatric syndromes. The lawyer might use the concepts of PTS in arguing mitigating circumstances. In any event, as much evidence as possible should be introduced for use where the jury decides the question of relationships.

Often PTS can be treated. There are numerous therapeutic regimes available which can markedly improve most of the symptoms of premenstrual tension. The greater the degree of character defect however, the less likely that drug treatment alone will be of help. Nonetheless, many behavioral problems can be considerably alleviated by medical therapy.