

Use and Abuse of Hyoscine. By LIONEL WEATHERLY, M.D.*

My apology for reading this short paper must be, my belief, that at our meetings too few communications are made bearing upon the medical treatment of mental disease.

Pathological research keeps making headway, but it must be disappointing to all of us engaged in psychological medicine and to the general practitioner (not to mention the general public) that our treatment does not at all keep pace with our knowledge acquired by study at the post-mortem table.

In all branches of medicine we have been inundated lately with new drugs, the manufacturer of each heralding abroad and trumpeting loudly the most fulsome praise of its wonderful effect. Possibly no class of medicine has furnished more new remedies of late years than that coming under the name of *Hypnotics*.

Of all these remedies not one, I firmly believe, deserves a permanent place on the shelf of our armamentarium so truly as Hyoscine, *if properly and carefully used*.

Hyoscine is an alkaloid—obtained from *Hyoscyamus*. Its salts readily crystallize. The preparations generally used are:—

The Hydrobromate.

The Hydro-iodate.

The Hydrochlorate.

The solution I use is always made up as 1 in 400, and as it is a drug which is not easy to keep, I use a sterilized solution with 5grs. of Boracic Acid to the ounce.

Dose: $\frac{1}{300}$ - $\frac{1}{100}$, increased very cautiously to $\frac{1}{50}$.

It is practically tasteless, which is a very *great advantage*.

Its antidote is Pilocarpine or Caffeine.

Speaking generally, its physiological action is as follows:— (Dr. John Mackenzie states that this is a bad drug to use continuously, as its use is followed by loss of weight and degradation of habit, the patient becoming untidy, etc., but my experience does not agree with this.)

Kidneys.—Dr. Tirard says it can be used with perfect safety where there is kidney disease and where morphia is therefore contra-indicated.

Digestive System.—It causes dryness of mouth and throat by diminishing flow of saliva.

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It may cause nausea or even vomiting ; but this is rare.

It does not purge ; but has no control over diarrhoea.

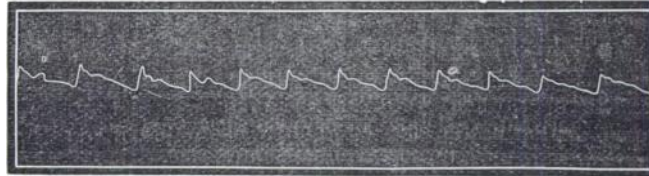
Temperature.—There are no statistics of any effect of Hyoscine in reducing temperature, but it is undoubtedly useful in controlling the delirium of high temperature.

Respiration.—It is said to have no effect on the respiration.

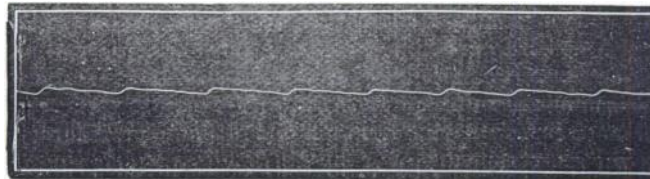
Circulation.—The effects upon the pulse are certainly open to some doubt, though I have found that in the majority of cases it depresses the circulation.

Whether by direct action on the heart or its centres, or by affecting the peripheral resistance, I am unable to say.

Sphygmographic tracings, before and after Hyoscine, are somewhat variable in their characters, but the one I show, which Dr. Buck, my Assistant Medical Officer, has taken for me, may fairly well illustrate the results on a normal heart.



No. 1.—Tracing taken before Hyoscine was given.



No. 2.—Tracing taken half an hour after administration of Hyoscine.

It will be plainly seen that after the Hyoscine the line of ascent is shorter, the general curve is long and low, the dicrotic wave is lost—in fact the pulse shows a tracing characteristic of heightened arterial tension.

This was the effect of a very small dose on a patient who has some tolerance of the drug.

I therefore agree with those authorities who have warned practitioners against the use of this drug, unless with the most watchful care, in cases of heart disease, though I know some hold a directly contrary opinion.

In cases where there is evidence of a weak heart or general feeble circulation I always combine ʒss or ʒi of Spt. Am.

Arom. with it, and this invariably counteracts or diminishes the depressing effect upon the circulation without in any way interfering with the action of the drug on the mental condition.

Nervous System.

Motor symptoms.—Walk may become ataxic even after a small dose, and cause a great feeling of fatigue. This I have noticed myself in some few cases. On the other hand, in some cases of disseminated sclerosis, senile, alcoholic tremors, and paralysis agitans, the drug has a marked controlling effect over the tremors and the powers of co-ordination.

Brain.—It often causes dizziness and even delirium. It may cause hallucinations, or change their character, and certainly in some few cases of hysterical mania it has produced hallucinations of the muscular sense.

Mental excitement, especially motor, is greatly controlled by it if not hysterical. It often fails, however, as a hypnotic in the excitement of tabes, and other cases where the motor symptoms are more prominent.

Its effect on temper and irritability, if given in repeated small doses, is in the majority of cases very marked.

Sleep.—By injection, one observer writes that his experience of this drug is that actual sleep is not produced, but a condition greatly resembling sleep, in which the patients are always found somnolent, but yet awake. My experience is certainly the same, *but* only when a small or moderate dose is given. A larger dose, say $\frac{1}{8}$ gr., will often produce a deep sleep, though this will pass into a simple somnolent condition after the lapse of a comparatively short time.

My experience of this remedy, extending over a period of three years, teaches me that its proper use is as a *mental alterative*, and in certain cases I must candidly confess I have seen it work almost wonders.

Most of us have constantly under our care cases which, maybe, partly from natural peculiarities of temperament, exaggerated by the insanity, partly from excessive brain irritability, render our lives a burden to us; not only to ourselves, not only to the attendants, but also to the patients around them are they a constant source of annoyance and worry. Quarrelsome to a degree; resenting vigorously the most ordinary rules of discipline; abusive, arrogant, and domineering.

Give such a case many of the drugs we have been in the habit of using, and what effect have they? None. The

incubus remains a stern reality in our midst, until his period of brain irritability has passed off.

Give such a case repeated small doses of Hyoscine, say $\frac{1}{100}$ of a grain, by the mouth, and what a change, in a large majority of cases, takes place!

I have seen many a time in my asylum such a case, under the influence of two doses of Hyoscine, and even of one small dose, become a decent member of society. From insolence and arrogance the stage to politeness and amiability has been as rapid, as marvellous.

The man, who was but a short time ago quarrelling with all around him, and showing himself to be a passed professor in the Anglo-Saxon language, suddenly asks one of his companions to play billiards with him, or sits down to the piano, or again makes himself comfortable in an armchair with a book or newspaper; and his tongue is no more that of a viper.

Take yet another case.

I have in my house a gentleman who suffers from the most marked Folie Circulaire. In his periods of excitement, before I used Hyoscine, I could find no means of ameliorating the acuteness of the attack, nor of checking the rapid increase of his maniacal excitement, his pulse bounding and throbbing violently, his scalp hot, and veins markedly full, his abuse, his opinion of his wonderful powers, his plans for altering the universe and setting everything right, becoming more and more exaggerated every minute. A dose of Hyoscine is given. In a few moments (certainly within the quarter of an hour) his pulse becomes compressible, his veins lose their turgid appearance, and the excitement shows symptoms of greatly subsiding; though the sub-acute stage thus produced may persist for some time.

Again, as showing the action of this drug as a mental alterative, let me briefly state the history of a case of puerperal mania I saw with my friend Mr. Craddock.

She was dreadfully excited, destructive, and violent; all attempts to get proper nourishment failed. No sleep whatever. She was rapidly passing into that fatal typhoid condition we so often see in these cases; high temperature, quick, weak, and thready pulse, dry brown tongue, and parched lips.

Every sort of drug had been tried. The case looked a hopeless one. We at once gave her, through the stomach tube, a good quantity of eggs, milk, and beef tea, and $\frac{1}{100}$ gr. of Hyoscine. She soon went to sleep and slept apparently a healthy, natural sleep for eight hours. When she woke she

was amenable to the nurses' wishes with regard to taking her food. Hyoscine was given night and morning, and though at times the excitement was great and she remained quite incoherent, still the nurses had but little trouble with her, and said she was a different being with regard to obedience to their wishes. In seven days she began to get lucid intervals of ten minutes' duration. These gradually increased in length and in frequency, whilst the excitement steadily decreased. The Hyoscine was steadily persisted in for 20 days. Then the improvement was so marked that it was left off. Two months from the day I saw her she had quite recovered.

From the time of the first dose of Hyoscine the persistent resistance to the wishes of the nurses with regard to feeding, etc., and which so handicapped the possibility of treatment, never returned.

A general paralytic, with delusions of untold wealth, *but* with the fixed idea that he had been robbed of it all, and by those in charge of him. His excitement at times and his wrath know no bounds. He longs for revenge, and no punishment is too great for the criminals who have so cruelly robbed him. Argument is, of course, useless. It only irritates. To leave him alone is impracticable, if not inadvisable. *Hyoscine is given.* Ten minutes, we are all friends and brothers, and "*jolly old pals.*"

It can be given in violent mania hypodermically, and its effect in many cases is to "knock over" the patient almost in a moment, but it is, I maintain, a dangerous remedy used in this way, unless it is carefully administered and its effects most attentively watched.

A case of acute delirious mania. The patient stripping himself, trying to dash out his brains against any object within his reach, desperately fighting with all around him, shouting, cursing—literally foaming at the mouth.

Give such a case, say $\frac{1}{100}$ gr. of Hyoscine hypodermically, and probably before you have cleaned and put away your syringe your patient lies huddled up on the floor apparently in a deep sleep. Speak to him, he will open his eyes for a moment and probably answer you coherently, though only in monosyllables. A vastly different creature, indeed.

But, as I have said, this is not always the happy result. The drug may in some cases produce such a condition of failure of the circulation and respiration that the patient seems in the most imminent danger.

I believe, however, that this effect, though very commonly

produced by *Hyoscyamine*, is more or less rarely caused by this drug. *Hyoscyamine* is constantly confused with *Hyoscine*. It is a remedy I would never use, and I am always cautioning medical men against confusing this dangerous remedy with the more or less safe one under our notice at present.

In hysterical cases with hallucinations I have found *Hyoscine* to be a very unsuitable remedy, though I cannot explain the reason of its failure.

In such cases the effect on the patients to whom I have given it has been either *nil* or very distressing.

I cannot do better than repeat what a patient (a case of Hyst. Insanity, with Hall., Ill., etc.) herself wrote of her experience of a dose of this medicine given hypodermically whilst in a condition of wild hysterical mania. "The needle was inserted in my arm, and I was put on the bed—a very queer state. I thought I was dying. I did not close my eyes for fear of losing consciousness, and as I spoke my voice seemed to come from the ceiling. I managed to unfasten my things and get my breath, and then my mouth and throat became dryer and dryer, and I could not swallow. I thought I was dying and kept choking, and when I tried to get to the water bottle I kept falling backwards, as if I had a load on my back. I suddenly sank, and felt myself dying, and I burst into peals of insane laughter. I tried to stop myself. As I sank lower and lower the louder I laughed. I gradually came round and looked in the looking-glass. I had the face of a raving lunatic, as if a cobra was on my head. When I was in bed the doctor and nurses came and stood around me, their faces bathed in bright gold, their eyes blazing and gleaming with insanity at me. They seemed turned to stone, like corpses, as I sat up staring at them in *horror*. Their faces were in a decomposed state. It was awful."

It was indeed with "horror" that she looked at us, and, holding my hand, begged me to save her from death and never to allow her to have the injection again.

In two other cases of hysterical insanity with hallucination I have used this drug, and in both it certainly altered the character of the hallucinations, making them ten times more distressing and horrible, and causing in each case hallucination of the muscular sense.

In cases of hysterical mania with hallucinations I have given it with very varying effect, and generally speaking I do not think the drug is a satisfactory one in any cases of insanity with hysterical symptoms.

In delirium tremens I have advised its use, and it has, in the few cases I have seen, been very successful, especially in a case under the care of Mr. Scott, who had tried all sorts of drugs with no effect, and the case was completely wearing all out. One hypodermic injection of Hyoscine procured long and natural sleep, the patient woke quite well and was in his business in 48 hours.

In a case of disseminated sclerosis with very exaggerated tremors and loss of brain power, Hyoscine has acted wonderfully well, and the medical man, Mr. Charles Terry, under whose care the case is, tells me that for four months the patient took $\frac{1}{100}$ gr. twice a day with very good effect on the tremors and co-ordinating powers generally, and that it certainly increased the brain power. It was then given in doses of $\frac{1}{80}$ gr., with very marked benefit. The shaking of the hands improved, the running backwards disappeared, and there was still less general tremor. The set look of the face improved, and more interest was taken in the events of the day.

I have seen this case several times, and the patient himself finds a great difference in his symptoms, if from any cause he leaves off taking the medicine for even twelve hours.

My friend, Dr. Law Wade, with whom I have had many conversations about this drug, and who, when he first used it, was disappointed in the results obtained, now writes me "that the steady administration of a small dose three times a day has acted wonderfully well in several cases, so well that it is impossible to conclude that the result is due to anything but the drug."

In mental depression I have found no good result, though I have tried it in many such cases.

In conclusion, I must repeat that I believe the most important use of Hyoscine is as a *mental alterative* in those cases which I have mentioned, as showing benefit by its administration in small and, if necessary, repeated doses.

In these cases it certainly changes the patient from an unmanageable, revolutionary factor in our midst to a person who is fairly amenable to the wishes of those about him, and often to a very presentable member of decent society.

It, as it were, knocks off the rough edge of temporary excitement and irritability, landing the patient, in many cases, very rapidly into a quiescent and altogether happier state of mind.

No one who has charge of insane patients can possibly disagree with the utility of a drug acting in this manner.

Its next use, I take it, is to control the tremors which we get in multiple sclerosis, in chronic alcoholism, and in paralysis agitans, and in many cases of general paralysis it greatly improves the powers of co-ordination when they are affected.

To rapidly subdue delirious and maniacal excitement it is certainly a valuable agent in experienced and careful hands, and will act more rapidly and more surely than any drug I know when given hypodermically; but as it is not a safe remedy I look upon the indiscriminate use of it as a powerful and sudden hypnotic as *its abuse*.

In some instances, as I have said, it certainly acts in a way no other drug known to me can act, but it may be attended in other cases with sudden fatal results, and I therefore think I am right in calling the indiscriminate use of a remedy with a possible action of this sort *its abuse*.

The kind of cases I believe it to be unsuitable for, I have already mentioned.

I trust there may be many here to-day who have definite experience of this, to my mind, valuable medicine, and that the discussion will throw more light upon its remedial powers and uses in mental disease.

Nothing, however, will shake my firm belief in the utility of the alkaloid in the class of cases I have tried my best to describe as suitable for its administration.

*On the Arithmetical Faculty and its Impairment in Imbecility and Insanity.** By WILLIAM W. IRELAND, M.D.

The operation of counting is so familiar to us, and so easily brought under mental observation, that a definition of what it is in learned terms does not make anything clearer to our minds. The abstract idea in numbers is as many as, five, that is, as many fingers as I have, as many as you have, as many as your mouth and eyes and ears together, or as many as the sepals of the rose.

Numbers relate both to time and to space, phenomena occurring successively as well as simultaneously, as many as, and as often as. He has as many teeth as you have lived years. The infant at first sees everything as one. Gradually it begins to differentiate, to distinguish itself from other things,

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