

P-0401

THE BIOCHEMICAL ASSESSMENT OF MEN WITH ERECTILE DYSFUNCTION

S. Barrett & P. Mostyn (London)

Background/Aims: From 1998 until 2001 all men presenting to our sexual health clinic with erectile dysfunction (ED) were investigated with a range of serum tests including a sex hormone profile, renal and liver function (DAX profile), thyroid function tests (TFTs), and in those older than 50 years, a prostate specific antigen (PSA). This is in addition to the plasma glucose measurements recommended in 1999 by the Erectile Dysfunction Alliance (EDA). The aim of this study was to assess the value of these additional serological tests.

Methods: A data collection form was applied to men completing a biochemical assessment for ED during the period 01/01/00 to 31/12/00.

Results: 95 new cases of men with ED and bloods completed were identified. Table 1 shows the percentage of men who completed the blood tests and the percentage abnormal

Table 1

Test performed	N (%) who had test	N (%) abnormal
DAX profile	90 (95%)	18 (19%)
TFTs	87 (92%)	2 (2%)
Testosterone	92 (97%)	24 (25%)
Glucose	79 (83%)	10 (10%)
PSA	21 (22%)	2 (2%)

59 (62%) of patients were reviewed in the psychosexual clinic. Of those that attended, 15 (25%) of patients were referred onwards to different specialities. No new cases of diabetes were found. Detection of abnormalities was higher with increasing age.

Conclusions: We found a high percentage of biochemical abnormalities in men presenting with ED, which increased with advancing age. Local guidelines have been revised so that only men with global ED who are over 50, or men under 50 with medical indications receive full biochemical assessment. Multicentre studies are needed to assess the value of incorporating routine biochemical screening into national standards, with the aim of treating underlying pathology rather than the lifelong commitment to expensive ED drugs.

THIS ABSTRACT IS NOT ENTERING THE BEST POSTER COMPETITION

P-0402

“NOT TONIGHT DEAR, I’VE GOT...” : THE DEVELOPMENT OF A COMMUNICATION TOOL TO AID PATIENT AND PRACTITIONER’S DISCUSSIONS OF SEXUAL PROBLEMS

P. Boynton (London)

Background: Research and diagnosis of sexual functioning is predominantly gained from questionnaire research or classifications like DSM-1V. Such approaches have been criticised for a limited view of sexual functioning, and pathologising people who may have sexual difficulties, but not dysfunctions. Whilst patients agree they would consult their GP for sexual problems, some feel uncertain what to say. Many GPs are inadequately trained in sexual health, meaning they avoid or mismanage consultations for sexual dysfunction. There are few resources available that enable practitioners and patients to talk about sex. Meaning it’s difficult identify problems and decide upon the correct course of treatment.

Aim: The Sex Life Inventory (SLI) has been developed to enable patients and practitioners to talk about sex. Its viability is currently being tested.

Method: The SLI is based on existing qualitative and critical sexological research. It covers four key areas:

1. Sexual problems due to social factors (e.g. lack of sex education, poor body image, exhaustion due to work/family commitments).
2. Sexual problems related to a partner (e.g. partner is abusive, has a sexual problem, or is sexually incompatible).
3. Sexual problems caused by psychological factors (e.g. previous sexual abuse).
4. Sexual problems linked to medical factors (e.g. side effects of drugs, heart disease, pregnancy etc).

Each section contains a number of statements for the patient to consider. A patient prior to seeing their practitioner, or during the consultation can complete the inventory. It highlights the main cause(s) of the patient’s problems, and suitable support (e.g. medical treatment, referral to marriage guidance, or a recommendation of a sex manual). Therapists, counsellors, and GPs can use it.

Conclusion: The SLI is currently being piloted amongst practitioners, and preliminary results suggest it is an accurate way of pinpointing sexual problems and assigning appropriate treatment.

POSTER COMPETITION: SEXUAL AND RELATIONSHIP THERAPY CATEGORY

P-0403

SYNERGISTIC ACTION OF ADVANCED GLYCATION ENDPRODUCTS AND ENDOGENOUS NITRIC OXIDE LEADS TO NEURONAL APOPTOSIS

S. Cellek (London)

Introduction and Objectives: We have previously shown that nitrenergic dysfunction leading to erectile dysfunction in diabetes is due to selective degeneration of nitrenergic neurons innervating the penile corpus cavernosum and that this selective neurodegeneration is nitric oxide (NO)-dependent. The aim of the present study was to investigate the underlying mechanisms in this degenerative process.

Materials and Methods: The effect of diabetic stimuli such as high glucose (up to 100 mM) and advanced glycation endproducts (AGEs) was studied on human neuroblastoma cells (SH-SY5Y cells) with or without nNOS expression. The cells were treated with retinoic acid to induce the expression of nNOS. Cell viability, apoptosis, oxidative stress and NO formation were measured.

Results: The viability of SH-SY5Y cells without nNOS expression is not affected with any diabetic stimuli. High glucose concentrations do not affect the viability of the nNOS-positive or nNOS-negative cells. However the cells which express nNOS go into apoptosis when they are exposed to advanced glycation endproducts (AGEs). AGEs do not induce apoptosis in nNOS-negative cells. The increase in oxidative stress due to AGEs when combined with endogenous NO leads to caspase-3-dependent apoptosis. The synergistic apoptotic stimulus can be inhibited by an inhibitor of NO synthase (L-NAME; 500 μ M), a pan-caspase inhibitor (Z-VAD-FMK; 50 μ M), an inhibitor of AGEs (sRAGE) or an anti-oxidant (N-acetyl-L-cysteine; 100 μ M), but not by an inhibitor of soluble guanylate cyclase (ODQ; 10 μ M).

Conclusions: These results show that the selective nitrenergic degeneration is a result of a synergistic action between endogenous NO and accumulated AGEs. These results demonstrate the paradoxical role of NO in diabetic autonomic neuropathy which acts both as a neurotransmitter and an apoptotic agent.

THIS ABSTRACT IS NOT ENTERING THE BEST POSTER COMPETITION

P-0404

THE RHO-KINASE INHIBITOR Y-27632 AND THE SOLUBLE GUANYLYL CYCLASE ACTIVATOR BAY41-2272 RELAX RABBIT VAGINAL WALL AND CLITORAL CORPUS CAVERNOSUM

S. Cellek (London)

Aim: The effects of Y-27632, a Rho-kinase inhibitor and BAY41-2272, a soluble guanylyl cyclase activator, on the tone and nitrenergic responses of rabbit vaginal wall and clitoral corpus cavernosum were investigated.

Methods: The study was performed using longitudinal strips of rabbit vaginal wall and clitoral corpus cavernosum mounted in perfusion chambers and connected to a force transducer to measure tension. Electrical field stimulation (EFS) was applied via platinum electrodes in the chambers.

Results: Y-27632 and BAY41-2272 (10nM-10 μ M) elicited concentration-dependent relaxation of phenylephrine-induced tone in both tissues. IC₅₀ values of Y-27632 for vaginal and clitoral tissues were 370 \pm 30 nM, and 467 \pm 14 nM, respectively. BAY41-2272 had IC₅₀ values of 478 \pm 54 nM and 304 \pm 38 nM respectively. The effect of the Y-27632 on the tissue tone was not affected by an inhibitor of nitric oxide synthase (L-NAME; 500 μ M). However, L-NAME reduced the potency of BAY41-2272 in the clitoral corpus cavernosum but not in the vaginal wall. BAY41-2272 enhanced nitrenergic relaxation responses only in the clitoral corpus cavernosum. Y-27632 had no effect on nitrenergic relaxations in either tissue.

Conclusion: These results demonstrate that Y-27632 and BAY41-2272 elicit relaxation of the rabbit vaginal wall and clitoral corpus cavernosum.

THIS ABSTRACT IS NOT ENTERING THE BEST POSTER COMPETITION

P-0405

FUNCTIONAL EVIDENCE FOR NITRERGIC NEUROTRANSMISSION IN THE HUMAN CLITORAL CORPUS CAVERNOSUM

S.M. Creighton, N.S. Crouch, N.A. Foxwell & S. Cellek (London)

Introduction and Objectives: Neuronal nitric oxide synthase (nNOS) containing (nitrergic) nerves have been demonstrated in the human clitoral corpus cavernosum. However the functional evidence for nitrergic neurotransmission in eliciting non-adrenergic non-cholinergic (NANC) relaxation responses has been limited to animal studies. Our aim was to investigate NANC responses in the human clitoral corpus cavernosum.

Materials and Methods: The tissue was obtained from a patient (age 38) undergoing clitoral reduction surgery due to cosmetic reasons. The patient did not have any genetic or endocrinological abnormality. The tissue was used for functional pharmacology, immunohistochemistry and Western blotting.

Results: Electrical field stimulation (EFS) caused reproducible relaxation responses in the presence of guanethidine (10 μ M), scopolamine (10 μ M) and phenylephrine (30 μ M). These responses were completely abolished in the presence of an inhibitor of NOS (L-NAME; 500 μ M). This inhibition was partially reversed with the substrate for NOS (L-arginine, 1mM). The remaining relaxation responses were completely inhibited by tetrodotoxin (3 μ M). Nitrergic nerves were demonstrated in the clitoral cavernous tissue with immunohistochemistry using nNOS antibody. These nerves were also stained with choline acetyl transferase antibody. nNOS expression was also demonstrated using Western blotting.

Conclusion: Our results show that NO produced by nNOS within the nitrergic/cholinergic nerves in the human clitoral corpus cavernosum is responsible for the NANC relaxation responses. This is the first demonstration of functional evidence for nitrergic neurotransmission in the human clitoral corpus cavernosum.

THIS ABSTRACT IS NOT ENTERING THE BEST POSTER COMPETITION

P-0406

HOW DO PATIENTS GAIN ACCESS TO A SEXUAL FUNCTION CLINIC?

D. Edwards (Chipping Norton)

Introduction: I decided to try to set up a Sexual Function Clinic in Chipping Norton as my ordinary general practice appointments were getting congested with such patients. It became apparent that funding a clinic from the Primary Care Trust PCT was a non-starter; although they did show an interest if I were to report my medical colleagues who were illegally prescribing erectile dysfunction medication under Section 11!!

Methods: Fortunately a pharmaceutical company offered to sponsor the clinic. We looked at ways of attracting patients to the clinic:

- ◆ I gave lectures to my medical and nursing colleagues
- ◆ Advertisements were placed in local free newspapers which are delivered free to every household
- ◆ We placed posters and tear off information cards in hospital outpatient departments and loos and the 'gents' in local pubs

I arranged for a dedicated telephone contact number and secretary who:

- ◆ Sets up appointments, sends out questionnaires and handles all queries with regards to the clinic administration
- ◆ Helps them with transport arrangements - one poor chap took 3 buses to get to his appointment!
- ◆ Sending clinic letters back to GP's and hospital colleagues within a few days

Results: All data is stored electronically so that information can be easily retrieved. So far we have:

- ◆ 3 previously undiagnosed diabetics
- ◆ 36% with glucose levels between 5.5-10mmol/l
- ◆ 4 referred to cardiologist, 1 pacemaker insertion
- ◆ 9 referred to smoking cessation
- ◆ 1 referred to vascular surgeon
- ◆ 1 cancer prostate
- ◆ 5 new hypertensives
- ◆ 1 referred to neurologist
- ◆ 60% have serum cholesterol >4.8mmol/l
- ◆ 31% have BMI >28

Conclusion: The newspaper adverts were a good initial way of getting referrals and since August we have not needed to re-advertise as new referrals are being initiated by GP colleagues.

POSTER COMPETITION: EDUCATION AND TRAINING IN SEXUAL MEDICINE CATEGORY

P-0407

A COMPARATIVE STUDY OF NCX-911 (NITRIC OXIDE-RELEASING SILDENAFIL) AND SILDENAFIL CITRATE IN NITRIC OXIDE DEFICIENT CONDITIONS

J. Kalsi, D.J. Ralph & S. Cellek (London)

Introduction and Objectives: PDE5 inhibitors have a reduced efficacy in the management of erectile dysfunction (ED) in conditions where endogenous nitric oxide (NO) is less available (i.e. long-term diabetes). As a result NO-releasing PDE5 inhibitors have been developed. One such compound is NCX-911, an NO-releasing derivative of sildenafil. The aim of this study was to compare the effects of NCX-911 and sildenafil firstly on the rabbit corpus cavernosum in the absence of endogenous NO and secondly on the anococcygeus muscle from control and diabetic rats.

Materials and Methods: The effects of NCX-911 and sildenafil were tested on phenylephrine-induced tone and nitrenergic relaxation of rabbit corpus cavernosum in the absence and presence of an inhibitor of NO synthase (L-NAME; 500 μ M). Diabetes was induced by single injection of streptozotocin in male rats. 16 weeks later NCX-911 and sildenafil were tested on phenylephrine-induced tone and nitrenergic relaxation of the anococcygeus muscle obtained from non-diabetic (control) and diabetic animals. The anococcygeus muscle is a widely accepted model to study nitrenergic neurotransmission.

Results: NCX-911 was found to be as potent as sildenafil in relaxing rabbit corpus cavernosum ($EC_{50}=997.8\pm 195.7$ nM and 1000.5 ± 140.8 nM respectively). The potency of NCX-911 was not altered but that of sildenafil decreased 5 fold in the presence of L-NAME (EC_{50} 1281.2 ± 268.3 nM and 4959.1 ± 882.1 nM respectively, $P<0.001$ for sildenafil). Both compounds potentiated nitrenergic relaxations with similar potencies. Both NCX-911 and sildenafil relaxed the anococcygeus muscle in the control group with a similar efficacy ($EC_{50}=1088.8\pm 165.0$ nM, and 827.1 ± 167.3 nM respectively). The potency of NCX-911 was not altered but that of sildenafil was significantly reduced in the diabetic group. ($EC_{50}=1765.9\pm 303.5$ nM and 2842.2 ± 640.3 nM respectively; $P<0.05$ for sildenafil vs control). 80% of nitrenergic responses were lost in the diabetic group. The remaining nitrenergic relaxation responses were not potentiated by either sildenafil or NCX-911.

Conclusions: These results further confirm that endogenous NO derived from nitrenergic nerves is significantly decreased in diabetes and suggest that NO-releasing PDE5 inhibitors could potentially be more useful than PDE5 inhibitors in the treatment of ED in long-term diabetes and other conditions where there is a lack of endogenous NO.

POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0408

**ERECTILE DYSFUNCTION IN HYPERHOMOCYSTEINAEMIC RABBITS:
THE ROLE OF COPPER**

A. Koupparis, R. Jones, J.Y. Jeremy, R. Persad & N. Shukla (Bristol)

Introduction: It has been suggested that a raised plasma level of homocysteine (HCy) may be a risk factor for vasculogenic erectile dysfunction (VED). HCy inhibits the nitric oxide (NO) - dependent relaxation of the corpus cavernosum (CC). This effect appears to be mediated via the generation of superoxide (O_2^-), and hydrogen peroxide (H_2O_2). It is known that copper (Cu^{2+}) is a catalyst for the generation of H_2O_2 in the presence of HCy. Furthermore, in the presence of Cu^{2+} , H_2O_2 undergoes reactions resulting in the generation of O_2^- . O_2^- reacts with NO to produce peroxynitrite ($ONOO^-$), thereby reducing the bioavailability of NO and impairing NO-mediated relaxation of CC. In order to elucidate the role of Cu^{2+} in mediating the impact of HCy on VED, the effect of dietary supplementation of the copper-chelator penicillamine to rabbits rendered hyperhomocysteinaemic (HHC) with methionine-rich diet was investigated.

Materials and Methods: Cavernosal smooth muscle strips were obtained from 3 groups of adult New Zealand White rabbits: a control group; a group rendered HHC with a diet supplemented with methionine; and a further HHC group who had additional dietary supplementation with the copper-chelator, penicillamine. Following precontraction with phenylephrine, relaxation responses to carbachol were assessed in all groups.

Results: There was a marked reduction of carbachol-stimulated relaxation of CC from HHC rabbits (maximal relaxation; $30 \pm 3\%$ [mean \pm SEM, $n = 6$] compared to controls (maximal relaxation; $48 \pm 5\%$; $n = 6$). This impairment was not seen in the HHC group supplemented with penicillamine (maximal relaxation; $62 \pm 8\%$; $n = 6$).

Discussion: These data demonstrate that elevated levels of HCy in the rabbit, in vivo, markedly impairs NO-dependent relaxation of CC. Furthermore, this effect appears to be augmented by copper. Further clinical studies on HCy and copper status in patients with VED are warranted.

POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0409

EFFECT OF HYPOXIA AND SUBSTRATE DEPLETION ON GUINEA PIG CORPUS CAVERNOSAL SMOOTH MUSCLE

P. Kumar, S. Minhas, A. Muneer, D.J. Ralph & C.H. Fry (London)

Introduction: An *in vitro* guinea pig model of ischaemic priapism has been characterised to study the effects of metabolic insults on cavernosal smooth muscle contractile properties. We have preliminary information that phenylephrine induced α -adrenergic contractions are attenuated under conditions mimicking ischaemia. The aim of this study was to investigate the effects of both metabolic insults and reperfusion on contractile responses to electrical field stimulation.

Materials and Methods: Strips of guinea pig corpus cavernosum (1mm diameter, 3mm length) were superfused at 37°C with Tyrode's solution (pH 7.4 with 5% CO₂ / 24mM NaHCO₃). Isometric contractions were elicited by electrical field stimulation (EFS: 3s trains of 0.1ms pulses; 8-60 Hz) of embedded motor nerves (tetrodotoxin-sensitive contractions). Ischaemic conditions were mimicked by reducing superfusate pO₂ (3 kPa), or omission of substrate (glucose/Na pyruvate) from the superfusate. Interventions were applied individually or in combination, followed by return to normal (control) solution. Tension was expressed as N/mm² and data shown as mean \pm s.d. Significance of differences (p<0.05) between means were tested by Student's *t*-test.

Results: Substrate depletion for 60 and 120 mins. significantly reduced the estimated maximum of the force/frequency relationship (T_{max}) to 85 \pm 10% (n=11) and 49 \pm 17% (n=6) of control. In addition the frequency required to generate half maximum tension ($f_{1/2}$) was reduced by 20 \pm 17% and 43 \pm 29% respectively. After reperfusion for 60 mins. tension remained at 85 \pm 4% (n=5) and 48 \pm 21% (n=6) of control. However the left shift of the $f_{1/2}$ returned to control values. With hypoxia, force was reduced to 80 \pm 4% (n=5) and 75 \pm 21% (n=3) after 60 and 120 mins. After return to normoxia for 60 mins. T_{max} returned to control. The combination of hypoxia and substrate depletion for 60 mins. reduced T_{max} to 16 \pm 14% of control. Upon reperfusion tension recovered to only 26 \pm 14% of control. In two precontracted strips, 180 mins. of substrate depletion reduced the magnitude of nerve mediated relaxation by 30%. During the metabolic interventions, baseline tension reduced by about 5% of that evoked by a stimulation of 32 Hz in control. Baseline tension returned to control following reperfusion, with no contraction.

Conclusion: Hypoxia and substrate depletion individually induced time-dependent reductions of EFS contractions. Recovery of function was impaired only after substrate depletion, but not hypoxia. Combination of the two interventions reduced function significantly by more than the sum of their individual effects, recovery was also severely impaired.

POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0410

THE PROTECTIVE EFFECT OF EXTRACELLULAR ACIDOSIS ON CONTRACTILE FAILURE IN CORPUS CAVERNOSAL SMOOTH MUSCLE

P. Kumar, S. Minhas, D.J. Ralph & C.H. Fry (London)

Introduction: In patients with ischaemic priapism, corporal blood aspirates show evidence of metabolic depletion as evidenced by low pO₂, low pH and low glucose. One hypothesis for this condition is reduced contractile function of corpus cavernosal muscle, that may in turn be due to one or more of the metabolic changes described above. This study aims to determine which metabolic insults are most significant in determining loss of contractile function.

Materials and Methods: Isometric contractions were recorded from strips of guinea pig corpus cavernosum in response to electrical field stimulation (EFS at 60 Hz, sensitive to 1 μM tetrodotoxin). Strips were superfused at 37°C with a HCO₃⁻/CO₂ buffered solution (pH 7.39). Ischaemia was mimicked by omitting substrate (glucose/Na pyruvate), reducing pO₂ (3 kPa), or reducing extracellular pH (7.02), either alone or in combination. Data are mean ± s.d.

Results: Substrate depletion had no significant effect on the EFS response after 60 minutes, (n=12); hypoxia had only a minor and reversible effect to 87±15% of control. However, both hypoxia and substrate depletion for 60 minutes reduced tension to 14±10% of control, with little recovery (27±16%) after 60 minutes in normal superfusate. Extracellular acidosis alone also reversibly reduced tension to about 70%. However, acidosis limited the depression of tension by hypoxia and substrate depletion (32±8%) and also enhanced the recovery in normal superfusate (73±8%).

Conclusion: A combination of hypoxia and substrate depletion exerted an injurious and only partially reversible effect on EFS contractions that was greater than the sum of their individual effects. Extracellular acidosis however partially protected against this detrimental action.

POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0411

HIGH FLOW PRIAPISM: TREATMENT AND LONG TERM FOLLOW UP

P. Kumar, V. Agrawal, D.J. Ralph & S. Minhas (London)

Introduction: High flow priapism follows unregulated arterial flow into the lacunar spaces of the corpora cavernosae. This occurs most commonly following penile or perineal trauma producing a cavernosal artery laceration. Embolisation of the the arterial-lacunar fistula is the management of choice. This study aims to ascertain the long term results of this therapeutic intervention.

Materials and Methods: The study included fifteen patients with an angiographically confirmed arterial priapism managed at our institution from January 1995 to December 2002. Data consisted of a retrospective case note review and a postal questionnaire for long-term follow up.

Results: Mean patient age was 31 ± 11 years. Aetiology was trauma (10/15), sickle cell (2) self injection (1), unknown (2). Nine patients had undergone procedures at other hospitals prior to referral (including shunt surgery in 3 patients). All but one patient reported normal erectile function prior to their priapism. Mean interval between onset of priapism and embolisation was 9 ± 2 days. Although eight patients required a repeat embolisation, detumescence was achieved in all patients with no immediate complications. No patients required opioid analgesia. Mean follow up was 42 ± 8 months. Of the 15 patients, 11 reported a return to normal erectile function. 3 patients had undergone insertion of a penile prosthesis (2 of these had shunt surgery prior to embolisation) and 1 patient required oral pharmacotherapy.

Conclusions: Selective embolisation for high flow priapism is a safe well tolerated procedure that preserves premorbid erectile function. Patients should be told that multiple procedures may be required and that subsequent erectile dysfunction is possible. Shunt surgery increases the risk of subsequent erectile failure.

POSTER COMPETITION: CLINICAL SEXUAL MEDICINE CATEGORY

P-0412

5-HYDROXYTRYPTAMINE-INDUCED CONTRACTIONS IN RABBIT AND HUMAN CAVERNOSAL TISSUES: RELEVANCE TO THE ERECTILE PROCESS

D.H.W. Lau, C.S. Thompson, R.J. Morgan & D.P. Mikhailidis (London)

Introduction: Penile erection results from the balance between relaxation and contractile mechanisms of the corpus cavernosum. Previous studies focused on and demonstrated the importance of nitric oxide (NO)-mediated relaxation in this process. However, little information is available as to the role of endogenous contractile agents such as 5-Hydroxytryptamine (5-HT).

Aims: To elucidate the possible role of 5-HT in the pathophysiology of corpus cavernosum function.

Method: The effect of 5-HT on rabbit and human cavernosal tissues were assessed in organ bath studies. The human tissues were obtained following the ethical approval from patients undergoing gender reassignment surgery. The 5-HT₂ antagonist (ketanserin) and the alpha-1-antagonist (doxazosin) were also used to further characterise the receptor profile. Median values are presented.

Results: 5-HT (10^{-3} M) caused a significant increase in contraction of both rabbit (64.5mg/mg; n=8) and human tissue (53.1mg/mg; n=8) from baseline recordings. Ketanserin (10^{-5} M) completely abolished the contractile response from rabbit tissue and decreased the human tissue response by 90%. These contractions were also inhibited by doxazosin (10^{-4} and 10^{-6} M; n=8) in a concentration-dependent manner in both rabbit (10^{-4} M; 87% reduction) and human (10^{-4} M; 94% reduction) tissue. The doxazosin response was not attributable to alpha blockade, since alpha-1 and 2 antagonist (corynanthine and yohimbine) had no effect on 5-HT-induced contractions of rabbit tissue.

Conclusions: The contractile response of 5-HT on rabbit and human cavernosal tissues is mediated via the 5-HT₂ receptor subtype. These results also imply that doxazosin may have beneficial effects on the erectile process due to its inhibition of 5-HT-induced contractions. Whether the 5-HT contractile pathway is enhanced in conditions (e.g. diabetes, hypercholesterolaemia) where the risk of erectile dysfunction is increased, needs to be clarified.

POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0413

CONTRACTILE ACTIVATION OF CORPUS CAVERNOSAL TISSUE FROM GUINEA-PIG

C-Y. Li, P. Kumar, S. Minhas, D.J. Ralph & C.H. Fry (London)

Aims: Erectile dysfunction is a common and increasing condition, but the pathophysiology remains unclear. With a paucity of human penile tissue, the aim is to develop an in vitro small-animal model, the results from which may be extrapolated to human tissue. The guinea-pig has been used extensively to investigate other genito-urinary tissues. The current objective was to characterise the neural control of corporal muscle.

Methods: Adult guinea pig (400g) penises were used. Corporal smooth muscle tissue strips were superfused (37°C, HCO₃⁻/CO₂ buffered, pH 7.4) and isometric contractions elicited either by electrical field stimulation (abolished by 1µM tetrodotoxin), or by application of agonists. Data are means±s.d.

Results: The frequency for half-maximal contraction, $f_{1/2}$, was 42±18 Hz, n=15. α -antagonist, prazosin (1µM) reduced the contraction to 25±13%. The residual contraction was abolished in five of six preparations by the purinergic receptor desensitiser □□ methylene-ATP (10µM). Phenylephrine induced contractions in a dose-dependant manner with pEC₅₀ of 5.80±0.24 (pEC₅₀= -log EC₅₀; EC₅₀=1.5 µM). Carbachol, a muscarinic agonist, relaxed tissue strips pre-contracted with 1.5µM phenylephrine in a dose-dependant manner, with a pEC₅₀ of 6.54±0.86 (mean EC₅₀=0.29µM). Quantitatively, similar results were obtained with human corporal muscle strips with respect to the effect of phenylephrine, pEC₅₀ of 5.87±0.06 (EC₅₀=1.34µM). This value was not significantly different from the value obtained from guinea-pig tissue (p=0.59).

Conclusion: Guinea-pig corporal smooth muscle exhibits sympathetic mediated contractions similar to that in human corporal tissue (1). Noradrenaline accounts for 75% of the contraction, and ATP the remainder. This may be present in human corporal smooth muscle and requires further investigation. Muscarinic agonists resulted in relaxation of muscle strip precontracted with phenylephrine. The relaxation may be mediated via the release of nitric oxide (NO), as in other preparations (2,3). The validation of an animal model, and comparison to human tissue, will enable a more effective understanding of the pathophysiology of erectile dysfunction to be achieved.

References:

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POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0414

THE ROLE OF SURGERY FOR PENILE DYSMORPHOPHOBIA AND CONGENITAL MICROPENIS

C-Y. Li, P. Kumar, V. Agrawal, S. Minhas & D.J. Ralph (London)

Aims: Penile shortening can be both a subjective, and an objective diagnosis. The underlying pathology includes penile dysmorphophobia, congenital micropenis and Peyronie's disease. Penile dysmorphophobia is the commonest complaint. Various penile lengthening procedures have been described for the treatment of this problem; however, most with unsatisfactory results. The aim of this study was to assess the results of penile lengthening employing the technique of division of suspensory ligament.

Methods: Patients who presented to a single unit requesting a penile lengthening procedure were included. Patients were treated with suspensory ligament division \pm fat pad excision \pm VY plasty \pm insertion of silicon buffer \pm insertion of alloderm graft, were reviewed. Data are given in means \pm s.d.

Results: Total of 42 patients underwent suspensory ligament division in order to achieve increased penile length. The presenting complaints include penile dysmorphophobia (n=21), congenital micropenis (n=10), Peyronie's disease (n=5), erectile dysfunction (n=3), post urethroplasty (n=1), congenital penile torsion (n=1) and post penectomy for squamous cell carcinoma of penis (n=1). The mean increase in penile length is 1.1 ± 1.2 cm. The outcome was measured using patient satisfaction: 62% were dissatisfied with the procedure and 55% of the total proceeded to have subsequent surgery in order to enhance their penile length further. Of all those requesting further surgery, only 36% were eventually satisfied with their penile length.

Conclusion: Patients presenting with penile dysmorphophobia often have an unrealistic expectation of surgical outcome. Division of suspensory ligament and/or other augmentation techniques do increase the apparent penile length but are not a cure. The primary treatment for penile dysmorphophobia should be counselling and surgery as a last resort due to the rates of patient dissatisfaction.

POSTER COMPETITION: CLINICAL SEXUAL MEDICINE CATEGORY

P-0415

ABNORMALITIES OF THE PENILE SUSPENSORY LIGAMENT

C-Y. Li, P. Kumar, V. Agrawal, N. Christopher, S. Minhas & D.J. Ralph (London)

Aims: The function of the penile suspensory ligament is to support and maintain the erect penis in an upright position during sexual intercourse. This paper assesses the management of patients who presented with an abnormality of the suspensory ligament, treated with repair of the suspensory ligament.

Methods: Fifty-nine patients were diagnosed with a suspensory ligament abnormality and underwent penile suspensory ligament repair. The diagnosis was made clinically, by the presence of a palpable gap between the pubis and the penis, and / or following a pharmacologically induced erection. The repair of the ligament was carried out using 4 ethibond sutures placed from the midline tunica to the symphysis pubis.

Results: Mean age of presentation is 28 years (a range of 14– 51yrs). The aetiologies were congenital (n=33), following sexual trauma (n=14), iatrogenic (n=11) and following a pelvic fracture (n=1). The presenting complaints were a penile curvature or torsion (n=47), an unstable erect penis (n=12) or erectile dysfunction (n=8). A good surgical result is defined as correction of penile deformity / instability with normal sexual function. This was achieved in 52 patients (88%). No improvement or persistent erectile dysfunction was present in 7 patients (12%). Another outcome measure was patient satisfaction. Overall, 75% of patients were happy with the end result.

Conclusion: Abnormalities of the penile suspensory ligament usually present with complex and unusual penile deformities associated with a variable degree of sexual dysfunction. The diagnosis is made on clinical observation and repair of suspensory ligament is a simple technique with successful cosmetic and functional outcome and a high patient satisfaction rate.

POSTER COMPETITION: CLINICAL SEXUAL MEDICINE CATEGORY

P-0416

THERAPEUTIC OPTIONS AND OUTCOMES IN IDIOPATHIC STUTTERING PRIAPISM

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Introduction: Idiopathic stuttering priapism refers to recurrent prolonged erections in the absence of underlying pathology. There is no established treatment algorithm for this condition and numerous pharmacotherapies have been utilised. The aim of this study was to review a series of patients with idiopathic stuttering priapism and assess the treatment outcomes.

Patients and Methods: A retrospective review of 35 patients with idiopathic stuttering priapism presenting over a 23 year period was performed. The management and outcomes were recorded. The hormone profiles and haematological parameters of each patient were also analysed.

Results: The mean age at onset was 44 years (range 18-63). 43% of patients reported nocturnal episodes only. Only 2 patients were found to have abnormal hormone profiles. The most frequently used pharmacotherapies were procyclidine and cyproterone acetate (CPA). Only 18% of patients treated with procyclidine reported a good response in contrast to 90% of patients receiving CPA. Pseudoephedrine reduced the duration of the priapism but not the frequency. Successful surgical interventions included bilateral subcapsular orchidectomy in 2 patients and insertion of penile prosthesis in 1 patient. One patient underwent an unsuccessful insertion of a phenylephrine drug delivery system and only 1 of 4 patients had a successful embolisation.

Conclusion: Patients with idiopathic stuttering priapism present a challenging problem. Procyclidine which is commonly used as a first line treatment does not appear to have a beneficial effect in this series of patients. CPA is the most efficacious pharmacotherapy. Surgical options which preserving erectile function are still limited.

POSTER COMPETITION: CLINICAL SEXUAL MEDICINE CATEGORY

P-0417

INVESTIGATION OF NOVEL THERAPEUTIC OPTIONS TO PREVENT IRREVERSIBLE CAVERNOSAL SMOOTH MUSCLE DYSFUNCTION IN LOW FLOW PRIAPISM

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Introduction: As the duration of low flow (ischaemic) priapism increases there can be a failure of penile detumescence despite corporal blood aspiration and the instillation of α -adrenergic agonists. The aim of this study was to use an in vitro model of low flow priapism to investigate novel pharmacotherapies in preventing irreversible smooth muscle dysfunction.

Materials and Methods: Male white New Zealand rabbits were sacrificed and strips of rabbit corpus cavernosum were mounted horizontally between 2 ring electrodes, superfused with Krebs's solution and precontracted using phenylephrine. Following a 4 hour perfusion period in ischaemic conditions, the strips were reperfused. Experiments were repeated in the presence of antioxidants, 500 μ M glutathione and 100 μ M N-acetylcysteine. Further experiments were conducted by adding 1) 10 μ M digoxin, 2) 10mM Ca^{2+} , 3) 1 μ M Bay K 8644. The nitric oxide synthase inhibitor L-NAME was also investigated.

Results: Tone was expressed as a % of the initial tone (mean \pm s.e.m.). After 4 hours simulated ischaemia, the tone recovered to 16.5 \pm 2.3% (n=10) indicating irreversible smooth muscle dysfunction. In the presence of antioxidants the tone recovered to 15.2 \pm 3.9% using glutathione and to 15.5 \pm 1.7% using N-acetylcysteine(n=4). Addition of 10mM Ca^{2+} resulted in recovery of tone to 31.7 \pm 0.9%(n=4). Addition of digoxin, Bay K 8644 and L-NAME did not significantly improve the recovery of tone.

Conclusions: The recovery of corporal smooth muscle tone is not significantly increased with the use of antioxidants, nitric oxide synthase inhibitors, Bay K 8644 or digoxin. Increasing extracellular Ca^{2+} concentration significantly increases the smooth muscle tone thus providing a potential therapeutic option.

POSTER COMPETITION: BASIC SCIENCE CATEGORY

P-0418

THE LUE PROCEDURE AS A SALVAGE FOLLOWING A NESBIT PROCEDURE

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Introduction: Residual penile deformity following a Nesbit procedure for Peyronie's disease can be a difficult problem to manage. A surgical option to correct this is to perform a Lue procedure. The aim of this study was to analyse the outcomes of performing a Lue procedure in patients with Peyronie's disease who have already undergone a Nesbit procedure and subsequently present with residual penile deformity.

Patients and Methods: Over a five year period, fifteen patients (mean age 52 years, range 33-66 years) presented to our department with residual penile deformity following a Nesbit procedure. All the patients had painless and stable Peyronie's disease and underwent the Lue procedure using plaque incision and venous grafts from the long saphenous vein or Tutoplast. The outcomes were assessed using a set criterion which recorded the degree of penile shortening, quality of erections and penile angulation.

Results: Pre-operatively, the mean angle of deformity was 50° (range 10-90°). The mean follow up was 10 months. Two patients reported post operative penile shortening and one patient reported a new onset of erectile dysfunction. 73% of patients had a straight penis. Overall, 93% of patients reported either an excellent or satisfactory result following the Lue procedure.

Conclusions: Our results indicate that the Lue procedure is a highly effective salvage procedure to correct residual penile deformity following a failed Nesbit procedure in patients with Peyronie's disease.

POSTER COMPETITION: CLINICAL SEXUAL MEDICINE CATEGORY

P-0419

POST VASECTOMY TESTICULAR PAIN SYNDROME: FACT OR FICTION?

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Introduction: Chronic testicular pain is a well-documented complication of vasectomy and can cause considerable morbidity. Previous British studies estimate the incidence of this complication to be in the region of 19-33%. Neither of these studies included a control group, and only recruited men up to 4 years post vasectomy. The aim of this study was to establish the incidence of chronic testicular pain up to 8 years following vasectomy and to compare it to the incidence of testicular pain over the same time period in an age matched group of men not having had vasectomy.

Methods: A retrospective case control study, using a telephone questionnaire was performed. 103 men were assessed 7-8 years post vasectomy. 41 men were assessed in the control group.

Results: 32% of the vasectomy group and 17% of the control group reported chronic testicular pain. ($p=0.11$). The pain was considered troublesome in 10% of the vasectomy group and 12% of the control group. ($p=0.89$).

Conclusions: This study shows that testicular pain is common after vasectomy. However, it is troublesome in only 10% and is seen in an equal proportion of aged matched controls. This raises the intriguing possibility that not all post vasectomy pain is secondary to surgery.

POSTER COMPETITION: EDUCATION AND TRAINING IN SEXUAL MEDICINE CATEGORY

P-0420

“HERBAL VIAGRA” FROM THE INTERNET: HOW SAFE IS IT?

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Introduction: Herbal remedies for erectile dysfunction (ED) can be purchased from the internet. Since internet sites providing information and the sale of ED are unregulated, the safety and reliability of these sites were assessed.

Patients & Methods: Using the 'Google' search engine and “Herbal Viagra” as keywords, the top 50 hits were assessed for safety and reliability using the Code of Conduct (COC) requirements provided by the Health on the Net Foundation (body that accredits medical web sites).

Result: The search revealed over 160,000 hits. Assessment of the sites revealed that 88% outlined the effectiveness of drugs, 70% stated drug ingredients but only 36% provided contra-indications and 21% drug side effects. Only 21% of sites had medically trained personnel providing information while only 24% clearly stated that their information was not to replace doctors' advice. Furthermore, only 18% had referenced information and 33% had disclaimers. The commonest ingredients were yohimbe, ginseng and ginkgo biloba. None of the sites fulfilled all COC requirements.

Conclusion: Our results demonstrate that internet sites selling herbal viagra are not safe and reliable. Although serious adverse effects (eg. bleeding disorders and cardiac dysrhythmias in ginkgo biloba) have been documented for the common ingredients, most sites state herbal remedies to be harmless. Furthermore, associated occult cardiovascular disease may be missed in patients with ED who acquire treatment from internet sites. With unreferenced information provided by sources that are not medically trained, users of herbal viagra may be at risk from serious side effects and complications.

POSTER COMPETITION: CLINICAL SEXUAL MEDICINE CATEGORY

P-0421

AN UNIDENTIFIED NEUROTRANSMITTER MEDIATES THE NON-NITRERGIC NANC RELAXATION RESPONSES IN THE RAT AND RABBIT VAGINAL WALL

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Introduction & Objectives: Relaxation of the vaginal smooth muscle is an important component of female sexual function. Immunohistochemical studies have shown that the human vaginal wall is innervated by nitric oxide synthase (NOS) and vasoactive intestinal peptide (VIP)-positive nerves. Our aim was to study non-adrenergic, non-cholinergic (NANC) relaxation in the rat and rabbit vaginal wall to determine which inhibitory neurotransmitters are involved.

Materials & Methods: Our study was performed using longitudinal and circular strips of rat and rabbit vaginal wall mounted in perfusion chambers and connected to a force transducer to measure tension. Electrical field stimulation (EFS) was applied via platinum electrodes in the chambers. Intracellular cGMP and cAMP concentrations were measured using enzyme immunoassay kits.

Results: After blocking noradrenergic and cholinergic responses and raising the tone, EFS of the tissue (5Hz, 5s train, 0.3ms pulse, 50V) caused NANC relaxations. These responses were abolished by tetrodotoxin (TTX), but were only partly inhibited by the NOS inhibitors L-NAME, L-NA or L-NIO or soluble guanylate cyclase inhibitor ODQ. The remaining relaxation (~65-75%) was not associated with any increase in cGMP or cAMP. Further experiments revealed that the non-nitroergic NANC responses were not mediated by VIP, PACAP, helospectins, CGRP, PHM, PHV, ATP, ADP or adenosine.

Conclusions: This study has shown that in the rat and rabbit vaginal wall NANC relaxations were partly mediated by nitric oxide. The remaining part was neurogenic since it could be inhibited by TTX. This non-nitroergic NANC response was not associated with any known neuropeptides or purines. The identification of the neurotransmitter responsible and its mechanism of action could provide potential targets for the treatment of female sexual dysfunction.

THIS ABSTRACT IS NOT ENTERING THE BEST POSTER COMPETITION