



جامعة المجمعة
Majmaah University

مؤتمر جامعة المجمعة الدولي الثاني للسكتة الدماغية

Second Majmaah University International
Stroke Conference

2026/2/4-3



جامعة المجمعة الدولي الثاني
للسكتة الدماغية

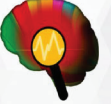
Majmaah University Second International
Conference on Stroke
2026

مصرف الراجحي
alrajhi bank



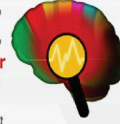
الجمعية السعودية
للحساسات الطبية

S A T S C
Stroke Research Chair
كرسي الشيخ عبدالله بن عبدالمحسن التويجري
«رحمه الله»
للأبحاث التطبيقية لحالات الجلطات الدماغية





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بسم الله الرحمن الرحيم

In the name of Allah, the Most Gracious, the Most Merciful

كلمة سعادة رئيس الجامعة



ترحب جامعة المجمعة بضيوفها الكرام من الخبراء والباحثين والممارسين والمهتمين بالمجال الصحي، بمناسبة انعقاد النسخة الثانية من مؤتمر جامعة المجمعة الدولي للسكتة الدماغية. ويأتي هذا المؤتمر تأكيداً لحرص الجامعة على الإسهام في القضايا الصحية ذات الأولوية، عبر رفع مستوى الوعي، وتوسيع دائرة المعرفة الطبية، ودعم الجهود العلمية الرامية إلى تطوير أساليب الوقاية والتشخيص والتدخل العلاجي في مجال السكتة الدماغية. وإدراكاً لما تفرضه السكتة الدماغية من تحديات تمسّ الإنسان والمجتمع، فإن الجامعة تؤمن بأهمية أن تقوم هذه المؤتمرات على أسس علمية راسخة، تجمع بين الخبرة السريرية والمعرفة البحثية، وتفتح المجال لتبادل التجارب واستعراض أحدث ما توصلت إليه الدراسات والتطبيقات. كما ينسجم تنظيم هذا المؤتمر مع توجهات الجامعة في تعزيز البحث والابتكار، ومع مستهدفات رؤية المملكة العربية السعودية 2030 التي تؤكد على جودة الحياة وتطوير القطاع الصحي واستدامة خدماته. وإذ نشمّن الجهود المبذولة في الإعداد لهذا المؤتمر، فإنني أتقدم بالشكر والتقدير للشركات الدوائية، والمنظمات الصحية، والمؤسسات الأكاديمية، وكافة الشركاء والرعاة، على ما قدموه من دعم يعكس قيمة التكامل والتعاون بين القطاعين العام والخاص في خدمة التطور العلمي والطبي. كما أرحب باسم الجامعة ومنسوبيها بجميع المشاركين والحضور، متمنياً أن تكون أعمال المؤتمر ومخرجاته إضافة نوعية تسهم في الارتقاء بالممارسات الصحية وتعزيز الوقاية والعلاج في هذا المجال.

أ.د. صالح بن عبدالله المزعل

كلمة سعادة وكيل الجامعة للدراسات العليا والبحث العلمي

يسرّ جامعة المجمعة، ممثلةً بوكالة الجامعة للدراسات العليا والبحث العلمي، أن ترحّب بضيوفها الكرام وبجميع المشاركين في النسخة الثانية من مؤتمر جامعة المجمعة للسكتة الدماغية، الذي يأتي هذا العام تأكيداً لالتزام الجامعة بدورها العلمي والمجتمعي، وسعيها إلى الإسهام في رفع الوعي الصحي وتعزيز جودة الحياة من خلال المعرفة الطبية الموثوقة والبحث العلمي الرصين.



لقد باتت السكتة الدماغية من أبرز التحديات الصحية ذات الأثر المباشر على الأفراد والأسر والأنظمة الصحية، الأمر الذي يجعل الوقاية المبكرة والتشخيص الدقيق والتدخل العلاجي الفعال محاور لا تقبل التأجيل. ومن هذا المنطلق، يأتي تنظيم هذا المؤتمر بوصفه منصة علمية تجمع الخبراء والباحثين والممارسين والطلاب؛ لتبادل الخبرات، ومناقشة أحدث المستجدات، واستعراض التجارب الناجحة، وبحث فرص تطوير الممارسات السريرية وفق المعايير المبنية على الدليل. وإن جامعة المجمعة، وهي تمضي قدماً في تحقيق مستهدفاتها البحثية، تؤكد أن الاستثمار في البحث والابتكار الصحي ليس خياراً تكميلياً، بل هو مسارٌ استراتيجي يعكس رؤية الجامعة ورسالتها، ويتناغم مع الأولويات البحثية الوطنية وتوجهات رؤية المملكة العربية السعودية 2030 في بناء مجتمع حيوي واقتصاد معرفي قائم على الابتكار. كما يهدف هذا المؤتمر إلى دعم الشراكات العلمية وتوسيع نطاق التعاون بين الجامعات والجهات الصحية والبحثية؛ بما ينعكس أثره على تحسين النتائج الصحية وتعزيز كفاءة الرعاية. وإذ نثمن الجهود الكبيرة التي بذلتها اللجان المنظمة والعلمية وكافة فرق العمل، فإننا نعزّز بمشاركة نخبة من المتخصصين الذين أثروا أعمال المؤتمر بعلمهم وتجاربهم. كما لا يفوتني أن أرفع خالص الشكر وعظيم الامتنان لسعادة رئيس الجامعة الأستاذ الدكتور/ صالح بن عبدالله المزعل على دعمه ورعايته وحرصه الدائم على تمكين الأنشطة العلمية والبحثية التي تخدم المجتمع وتفتح آفاقاً جديدة للتميز. ختاماً، نسأل الله أن يكتب لهذا المؤتمر النجاح والتوفيق، وأن تكون مخرجاته العلمية إضافة نوعية تسهم في تطوير الوقاية والعلاج في مجال السكتة الدماغية، وأن يبارك جهود الجميع ويجزيهم خير الجزاء

أ.د. محمد بن عبدالرحمن الشهري

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المقدمة

تشرف جامعة المجمعة، ممثلة بوكالة الجامعة للدراسات العليا والبحث العلمي، بإطلاق النسخة الثانية من مؤتمر جامعة المجمعة الدولي للسكتة الدماغية، تأكيداً لدورها في تعزيز صحة المجتمع وحرصها على الإسهام في تطوير الممارسات الصحية والارتقاء بجودة الرعاية المقدمة لمرضى السكتة الدماغية.

يهدف هذا المؤتمر إلى رفع مستوى الوعي العلمي والطبي حول السكتة الدماغية، ودعم تبادل المعرفة والخبرات بين المختصين، إلى جانب تسليط الضوء على أحدث الأساليب والتقنيات في الوقاية، التشخيص المبكر، العلاج، وإعادة التأهيل، بما يساهم في تحسين جودة حياة المرضى والناجين وتعزيز فرص التعافي لديهم.

كما يسعى المؤتمر إلى إبراز دور الابتكار والتقنيات الحديثة والذكاء الاصطناعي في تطوير خدمات الرعاية الصحية، وتعزيز التكامل بين مختلف التخصصات الطبية، بما يواكب التطورات العالمية ويساهم في تحسين كفاءة التعامل مع حالات السكتة الدماغية في مراحلها المختلفة.

وتتميز هذه النسخة بتوسيع نطاق محاورها العلمية لتشمل الجوانب العلاجية والتأهيلية والداعمة، مع التركيز على تطوير الحلول العلمية والتطبيقية التي تساهم في الحد من المضاعفات وتحسين النتائج العلاجية على المدى القصير والطويل.

ويأتي انعقاد هذا المؤتمر انسجماً مع رؤية المملكة العربية السعودية 2030 ورؤية جامعة المجمعة في تعزيز البحث والابتكار والارتقاء بجودة الحياة، ودعمًا لجهود بناء نظام صحي أكثر كفاءة ومرونة، يضع الإنسان في قلب اهتماماته.

مكان عقد المؤتمر

جامعة المجمعة و تُعد من الجامعات الحديثة في المملكة العربية السعودية، حيث انضمت إلى منظومة الصروح العلمية لتكون رافداً للتعليم الجامعي، وتمتاز بتوفير خدمات تعليمية وبحثية متقدمة إلى جانب دورها في خدمة المجتمع، وتسعى إلى تحقيق التميز في مختلف المجالات. تقدم جامعة المجمعة مجموعة واسعة من البرامج الأكاديمية في مختلف التخصصات والدرجات العلمية، وتضم كليات متنوعة تشمل العلوم الإنسانية، والعلوم الطبية، والهندسة، وعلوم الحاسب، والعلوم الاقتصادية والإدارية، إضافةً إلى العديد من المجالات الأخرى. وبالإضافة إلى دورها الأكاديمي والمجتمعي، تلتزم الجامعة بدعم البحث العلمي وتنظيم الفعاليات والمؤتمرات العلمية بهدف تعزيز التبادل المعرفي والتفاعل بين الباحثين والمختصين. وفي هذا الإطار، تفخر الجامعة بتنظيم المؤتمر الدولي الثاني للسكتة الدماغية، والذي يعكس اهتمامها بتطوير المعرفة العلمية في هذا المجال وسعيها لتحسين صحة الأفراد وتقديم حلول علمية متقدمة. يأتي المؤتمر ضمن التزام الجامعة بتعزيز البحث العلمي والتطوير في مجالات الصحة العامة بهدف تحسين رعاية المجتمع.



أهداف المؤتمر

- مواكبة أحدث المستجدات العلمية وتبادل المعرفة والتجارب والأبحاث الحديثة في مجال السكتة الدماغية
- استعراض أحدث البيانات والدراسات والتقنيات الطبية والرقمية، لتحقيق فهم أعمق للتحديات والتطورات المرتبطة بإدارة السكتة الدماغية.
- تعزيز الوعي والفهم العلمي للمشاركين بأهمية الوقاية من السكتة الدماغية، وآليات الحد من عوامل الخطورة، وطرق التعامل العلاجي والتأهيلي الحديثة.
- تعزيز التفاعل والتكامل بين الأطباء والباحثين والممارسين الصحيين من مختلف التخصصات ذات العلاقة بالسكتة الدماغية.
- استعراض أحدث الابتكارات والتقنيات المساندة في التشخيص والعلاج وإعادة التأهيل، ودورها في تحسين جودة الرعاية الصحية ورفع كفاءة النتائج العلاجية.
- دعم التدريب والتعليم المستمر للكوادر الصحية في مجال السكتة الدماغية، وتطوير مهاراتهم المهنية بما يواكب أفضل الممارسات العالمية.

مجالات المؤتمر

- تشمل مجالات مؤتمر جامعة المجمعة الدولي للسكتة الدماغية مجموعة متنوعة من المواضيع التي تغطي أحدث التطورات والابتكارات في التشخيص والعلاج والتأهيل المرتبط بالسكتة الدماغية.

1. تشخيص السكتة الدماغية وتقييم عوامل الخطورة

- الاتجاهات الحديثة في التشخيص المبكر للسكتة الدماغية.
- تقييم عوامل الخطورة وآليات اكتشاف السكتة.
- استراتيجيات الحد من المضاعفات وتحسين النتائج العلاجية.
- الصرع ما بعد السكتة الدماغية.

2. مستجدات علاج السكتة الدماغية والرعاية السريرية

- التطورات الحديثة في إدارة السكتة الدماغية الحادة.
- المبادئ الأساسية للعلاج الدوائي والتداخلي.
- الأسس العامة للتدخلات الجراحية في حالات السكتة الدماغية.
- المبادئ الأساسية للتغذية العلاجية بعد السكتة.

3. إعادة التأهيل وتحسين جودة الحياة بعد السكتة الدماغية

- ما بعد التعافي الحركي: رعاية شاملة لألم وتشنج ما بعد السكتة الدماغية.

- تقييم الإدراك الوظيفي بعد السكتة.
- دعم جودة الحياة طويلة المدى للناجين من السكتة الدماغية.
- خارطة طريق متعددة التخصصات لإعادة تأهيل السكتة الدماغية.

4. التقنيات الحديثة والتطورات الطبية في مجال تأهيل السكتة الدماغية

- الابتكارات الرقمية في متابعة وتحسين الأداء الوظيفي.
- التعلم الآلي والذكاء الاصطناعي في إعادة تأهيل السكتة الدماغية.
- دور التحفيز العصبي في دعم التعافي.
- استعادة التحكم بالجذع بعد السكتة الدماغية.

5. التداخلات العلاجية والداعمة بعد السكتة الدماغية

- دور التمريض في رعاية مرضى السكتة الدماغية.
- استخدام الذكاء الاصطناعي في اتخاذ القرار التمريضي السريري: نحو رعاية أكثر دقة وكفاءة.
- صحة الفم وتأثيرها على المضاعفات بعد السكتة.
- استراتيجيات الوقاية من المضاعفات الصحية بعد السكتة الدماغية.



أنواع المشاركات في المؤتمر

تكون المشاركة في فعاليات المؤتمر على النحو الآتي:

1. تقديم الأوراق العلمية (Paper/oral Presentations):
يمكن للباحثين والمتخصصين تقديم أبحاثهم ودراساتهم الأصلية.
2. العروض الملصقة (Poster Presentations):
يتم عرض الملصقات العلمية التي تحتوي على ملخص للبحث.
3. العروض الملصقة الطلابية (Students Poster Presentations):
يتم عرض الملصقات العلمية التي تحتوي على ملخص للبحث.
4. المعرض (Exhibition):
يوفر المعرض فرصة للشركات والموردين لعرض منتجاتهم وتقنياتهم المتعلقة بالجلطات الدماغية.



المتحدثون



المتحدثون

د. ناصر ضيف الله العتيبي			صاحبة السمو الملكي الأميرة الدكتورة نوف بنت الحسن آل سعود		
طبيب استشاري في أمراض المخ والأعصاب والسكتة الدماغية بمستشفى الملك فيصل التخصصي ومركز الأبحاث			استشارية جراحة التجميل رئيسة مجلس إدارة الجمعية العلمية السعودية للصحة الوقائية		
المبادئ الأساسية للعلاج الدوائي والتداخلي			افتتاح الجلسات العلمية اليوم الأول		
د. محمد عبيد العتيبي			د. سعيد صالح الزهراني		
طبيب استشاري في طب المخ والأعصاب والقسطرة دماغية وأستاذ مساعد جامعة الملك سعود.			طبيب استشاري في طب الأعصاب والسكتة الدماغية، وقائد برنامج طب الأعصاب الافتراضي في مستشفى صحة الافتراضي، ومدير برنامج زمالة السكتة الدماغية في مدينة الملك فهد الطبية		
التطورات الحديثة في إدارة السكتة الدماغية الحادة			الاتجاهات الحديثة في التشخيص المبكر للسكتة الدماغية		
د. ابتهاج أسامة الوزن			أ.د. هارون فياض شودي		
طبيب استشاري في طب المخ والأعصاب للجبار ورئيس قسم الصرع وتخطيط الدماغ الكهربائي، مستشفى صحة الافتراضي			طبيب استشاري في طب جراحة المخ والأعصاب بـمَدَسُون لجراحة المخ والأعصاب.		
الصرع ما بعد السكتة الدماغية			الأسس العامة للتدخلات الجراحية في حالات السكتة الدماغية		

المتحدثون

د. حنان حمدان الشهري أستاذ مساعد في قسم التمريض بتخصص التمريض الطبي والجراحي بجامعة الأميرة نورة بنت عبدالرحمن. دور التمريض في رعاية مرضى السكتة الدماغية		د. سعيد أحمد الغامدي أستاذ مساعد وطبيب استشاري في طب المخ والأعصاب بمستشفى الملك فيصل التخصصي و مركز الأبحاث. دعم جودة الحياة طويلة المدى للناجين من السكتة الدماغية	
د. محمد ناصر الشهراني طبيب استشاري ورئيس قسم الطب الطبيعي وإعادة التأهيل بمدينة الملك عبدالعزيز الطبية بالحرس الوطني الابتكارات الرقمية في متابعة وتحسين الأداء الوظيفي		د. حنان عبدالرحمن الحازمي طبيب استشاري جلطات الدماغ وقسطرة الأعصاب التداخلية مدينة الملك فهد الطبية استراتيجيات الحد من المضاعفات وتحسين النتائج العلاجية	
د. عبدالعزيز محمد العثمان أستاذ واستشاري التغذية السريرية ورئيس الجمعية السعودية للتغذية العلاجية المبادئ الأساسية للتغذية العلاجية بعد السكتة		د. محمود عبدالله الشنقيطي استشاري مخ وأعصاب وجلطات دماغية بمدينة الملك فهد الطبية تقييم عوامل الخطورة وآليات اكتشاف السكتة	

المتحدثون

د. نورة عبدالعزيز الهويمل			د. عبدالله محمد الاحمري		
أستاذ مشارك في قسم العلاج الطبيعي بجامعة الأمير سطام بن عبدالعزيز في الخرج			طبيب استشاري بوزارة الدفاع، مدينة الأمير سلطان الطبية العسكرية		
استعادة التحكم بالجذع بعد السكتة الدماغية			ما بعد التعافي الحركي: رعاية شاملة للألم وتشنج ما بعد السكتة الدماغية		
الأخصائي عبد الكريم سليمان الحميد			أ.د. عباس صالح المطير		
أخصائي أول في العلاج الطبيعي ورئيس قسم العلاج الطبيعي مدينة الأمير سلطان الطبية العسكرية			مدير مركز الأبحاث في مجموعة الموسى الصحية		
دور التحفيز العصبي في دعم التعافي			الرعاية السريرية المتكاملة داخل وحدات السكتة الدماغية		
الأخصائي سعود محمد السعدون			د. محمد أسامة الحيزان		
أخصائي علاج طبيعي في وزارة الحرس الوطني للشؤون الصحية			أستاذ مشارك واستشاري التأهيل الإدراكي العصبي بجامعة الملك سعود		
خارطة طريق متعددة التخصصات لإعادة تأهيل السكتة الدماغية			تقييم الإدراك الوظيفي بعد السكتة		

المتحدثون

د. تركي فلاح المطيري



أستاذ مساعد في جراحة الوجه والفكين وعلوم التشخيص بجامعة المجمعة



صحة الفم وتأثيرها على المضاعفات بعد السكتة



الأخصائي محمد حسن الحربي



أخصائي أول في العلاج الطبيعي ومدير قسم خدمات إعادة التأهيل
بمدينة الملك عبدالعزيز الطبية بالحرس الوطني



التعلم الآلي والنكاه الاصطناعي في إعادة تأهيل السكتة الدماغية



مدراء الجلسات

د. شريفه محمد العسيري أستاذ مشارك في تمريرى الرعاية الحرجة والقلب بجامعة المجمعة إدارة الجلسة		د. عبدالرحمن عبيد الحربي عميد كلية الطب وأستاذ مشارك في طب الأعصاب والجلطات الدماغية بجامعة المجمعة إدارة الجلسة	
د. دانة محمد اليعني أستاذ مشارك في العلاج الطبيعي بجامعة المجمعة إدارة الجلسة		د. ريم محسن المطيري أستاذ مساعد في اصلاح وتجميل الأسنان بجامعة المجمعة إدارة الجلسة	
د. فيصل سعود الكثيري البورد الفرنسي في جراحة المخ و الاعصاب إدارة الجلسة			



برنامج المؤتمر



برنامج المؤتمر

فعاليات اليوم الأول للمؤتمر - الثلاثاء (3/2/2026)

افتتاح المؤتمر والمعرض المصاحب الثلاثاء (2026/2/3)

اليوم	الفعالية	الزمن
الأول	التسجيل واستقبال الحضور والمشاركين	09:00 - 08:00
	ضيافة ترحيبية	09:30 - 09:00
	افتتاح المعرض المصاحب للمؤتمر وزيارة أجنحة الجهات المشاركة في المعرض	10:00 - 09:30
افتتاح المؤتمر		
كلمة سعادة وكيل الجامعة للدراسات العليا والبحث العلمي أ.د. محمد بن عبدالرحمن الشهري		

برنامج المؤتمر

الجلسات العلمية في المؤتمر			
اليوم الأول	الجلسة الأولى	زمن الجلسة	12:00 – 10:00
العنوان		تطورات تشخيص السكتة الدماغية	
إدارة الجلسة		د. عبدالرحمن عبيد الحربي	
افتتاح الجلسات العلمية اليوم الأول – صاحبة السمو الملكي الأميرة د. نوف آل سعود			
المتحدث	د. سعيد صالح الزهراني	المتحدث	د. حنان عبدالرحمن الحازمي
الجهة	طبيب استشاري في طب الأعصاب والسكتة الدماغية ، وقائد برنامج طب الأعصاب الافتراضي في مستشفى صحة الافتراضي، ومدير برنامج زمالة السكتة الدماغية في مدينة الملك فهد الطبية.	الجهة	طبيب استشاري، جلطات الدماغ وقسطرة الأعصاب التداخلية مدينة الملك فهد الطبية
العنوان	الاتجاهات الحديثة في التشخيص المبكر للسكتة الدماغية	العنوان	استراتيجيات الحد من المضاعفات وتحسين النتائج العلاجية
الزمن	10:35 – 10:10	الزمن	11:20 – 10:55
المتحدث	د. محمود عبدالله الشنقيطي	المتحدث	د. ابتهاج أسامة الوزنه
الجهة	طبيب استشاري مخ وأعصاب وجلطات دماغية بمدينة الملك فهد الطبية	الجهة	طبيب استشاري في طب المخ والأعصاب للكبار ورئيس قسم الصرع وتخطيط الدماغ الكهربائي، مستشفى صحة الافتراضي.
العنوان	تقييم عوامل الخطورة وآليات اكتشاف السكتة	العنوان	الصرع ما بعد السكتة الدماغية
الزمن	10:55 – 10:35	الزمن	11:45 – 11:20
ورقة علمية			
استراحة			
		12:00 – 11:45	
		12:30 – 12:00	

برنامج المؤتمر

الجلسات العلمية في المؤتمر			
اليوم الأول	الجلسة الثانية	زمن الجلسة	14:30 – 12:30
العنوان		مستجدات علاج السكتة الدماغية والرعاية السريرية	
إدارة الجلسة		د. فيصل سعود الكثيري	
المتحدث	د. محمد عيد العتيبي	المتحدث	أ.د. هارون فياض شودي
الجهة	طبيب استشاري في طب المخ والأعصاب والقسطرة دماغية وأستاذ مساعد جامعة الملك سعود.	الجهة	طبيب استشاري في طب جراحة المخ والأعصاب بحدسون لجراحة المخ والأعصاب.
العنوان	التطورات الحديثة في إدارة السكتة الدماغية الحادة	العنوان	الأسس العامة للتدخلات الجراحية في حالات السكتة الدماغية
الزمن	13:00 – 12:30	الزمن	13:50 – 13:25
المتحدث	د. ناصر ضيف الله العتيبي	المتحدث	أ.د. عبدالعزيز محمد العثمان
الجهة	طبيب استشاري في أمراض المخ والأعصاب والسكتة الدماغية بمستشفى الملك فيصل التخصصي ومركز الأبحاث	الجهة	أستاذ واستشاري التغذية السريرية ورئيس الجمعية السعودية للتغذية العلاجية
العنوان	المبادئ الأساسية للعلاج الدوائي والتداخلي	العنوان	المبادئ الأساسية للتغذية العلاجية بعد السكتة
الزمن	13:25 – 13:00	الزمن	14:15 – 13:50
ورقة علمية		14:30 – 14:15	
غداء ضيوف المؤتمر		14:30	

برنامج المؤتمر

فعاليات اليوم الثاني للمؤتمر - الأربعاء (4/2/2026)

الجلسات العلمية في المؤتمر			
اليوم الثاني	الجلسة الأولى	زمن الجلسة	10:30 – 9:00
العنوان		إعادة التأهيل وتحسين جودة الحياة بعد السكتة الدماغية	
إدارة الجلسة		د. دانة محمد اليحيى	
المتحدث	د. عبدالله محمد الاحمري	المتحدث	د. سعيد أحمد الغامدي
الجهة	طبيب استشاري بوزارة الدفاع، مدينة الأمير سلطان الطبية العسكرية	الجهة	أستاذ مساعد وطبيب استشاري في طب المخ والأعصاب بمستشفى الملك فيصل التخصصي و مركز الأبحاث.
العنوان	ما بعد التعافي الحركي: الرعاية الشاملة للألم والتشنج بعد السكتة	العنوان	دعم جودة الحياة طويلة المدى للناجين من السكتة الدماغية
الزمن	09:20 – 09:00	الزمن	10:00 – 09:40
المتحدث	د. محمد أسامة الحيزان	المتحدث	أ. سعود محمد السعدون
الجهة	أستاذ مشارك واستشاري التأهيل الإدراكي العصبي بجامعة الملك سعود	الجهة	أخصائي علاج طبيعي في وزارة الحرس الوطني للشؤون الصحية
العنوان	تقييم الإدراك الوظيفي بعد السكتة	العنوان	دور الفريق متعدد التخصصات في رحلة التعافي
الزمن	09:40 – 09:20	الزمن	10:20 – 10:00
ورقة علمية		10:30 – 10:20	
استراحة		11:00 – 10:30	

برنامج المؤتمر

الجلسات العلمية في المؤتمر			
اليوم الثاني	الجلسة الثانية	زمن الجلسة	11:00 – 12:30
العنوان		التقنيات الحديثة والتطورات الطبية في مجال تأهيل السكتة الدماغية	
إدارة الجلسة		د. شريفه محمد العسيري	
المتحدث	د. محمد ناصر الشهراني	المتحدث	أ. عبد الكريم سليمان الحميد
الجهة	طبيب استشاري ورئيس قسم الطب الطبيعي وإعادة التأهيل بمدينة الملك عبدالعزيز الطبية بالحرس الوطني.	الجهة	أخصائي أول في العلاج الطبيعي ورئيس قسم العلاج الطبيعي مدينة الأمير سلطان الطبية العسكرية
العنوان	الابتكارات الرقمية في متابعة وتحسين الأداء الوظيفي	العنوان	دور التحفيز العصبي في دعم التعافي
الزمن	11:20 – 11:00	الزمن	12:00 – 11:40
المتحدث	أ. محمد حسن المريبي	المتحدث	د. نورة عبدالعزيز الهويمل
الجهة	أخصائي أول في العلاج الطبيعي ومدير قسم خدمات إعادة التأهيل بمدينة الملك عبدالعزيز الطبية بالحرس الوطني	الجهة	أستاذ مشارك في قسم العلاج الطبيعي بجامعة الأمير سطام بن عبدالعزيز في الخرج
العنوان	مستقبل التأهيل باستخدام الأنظمة الذكية	العنوان	التعافي الجذعي بعد السكتة الدماغية
الزمن	11:40 – 11:20	الزمن	12:20 – 12:00
ورقة علمية		12:45 – 12:30	
إعلان نتائج تقييم الملخصات البحثية وأسماء الفائزين		12:45 – 12:20	
استراحة		13:00 – 12:45	

برنامج المؤتمر

الجلسات العلمية في المؤتمر			
اليوم الثاني	الجلسة الثالثة	زمن الجلسة	14:30 – 13:00
العنوان		التمرير، التغذية، صحة الفم، والوقاية بعد السكتة الدماغية	
إدارة الجلسة		د. ريم محسن المطيري	
المتحدث	د. حنان حمدان الشهري	المتحدث	د. تركي فلاح المطيري
الجهة	أستاذ مساعد في قسم التمريض بتخصص التمريض الطبي والجراحي بجامعة الأميرة نورة بنت عبد الرحمن.	الجهة	أستاذ مساعد في جراحة الوجه والفكين وعلوم التشخيص بجامعة المجمعة
العنوان	دور التمريض في رعاية مرضى السكتة الدماغية	العنوان	صحة الفم وتأثيرها على المضاعفات بعد السكتة
الزمن	13:30 – 13:00	الزمن	14:10 – 13:50
المتحدث	د. عباس صالح المطير	المتحدث	د. عاليه فالح الرويلي
الجهة	مدير مركز الأبحاث في مجموعة الموسى الصحية	الجهة	طبيب استشاري ومدير شؤون التأمين الصحي وقائد فريق الوساطة في مستشفى صحة الافتراضي التابع لوزارة الصحة
العنوان	استخدام الذكاء الاصطناعي في اتخاذ القرار التمريضي السريري: نحو رعاية أكثر دقة وكفاءة	العنوان	استراتيجيات الوقاية من المضاعفات الصحية بعد السكتة الدماغية
الزمن	13:50 – 13:30	الزمن	14:30 – 14:10
التوصيات الختامية		14:30	
غداء ضيوف المؤتمر		14:35	

رعاية المؤتمر



شركاء النجاح





الأوراق العلمية المشاركة Oral presentation



الأوراق العلمية المشاركة (Oral presentation)

Scientific Paper Title	Presenting Author
STROKE REHABILITATION: BRIDGING EVIDENCE TO PRACTICE KEY INSIGHTS FROM OUR RESEARCH	Dr. Ahmad Zaheer Qureshi
Cerebral Venous Sinus Thrombosis in Pregnancy and the Postpartum Period Incidence, Management, and Maternal Mortality Outcomes: A Systematic Review and Meta-analysis	Dr. Tayseer Dhaifallah Al-Muteri
The Relationship between Stroke Patients Knowledge and Emergency Arrival Time among Adult Stroke Patients	Ms.Arwa Abdullah Alhamed
Mirror Therapy Improves the Motor and TimedFunctional Ability of the Upper Extremity among ChronicStroke Patients: A Single-Blinded Multicentered: Randomized Controlled Trial.	Ms.Weam Okab Alsalem

الملصقات العلمية المشاركة

Poster Presentation

الملصقات العلمية المشاركة (Poster Presentation)

No	Poster Title	Authors
1	Safety And Efficacy Of Stem Cell Therapy In Ischemic Stroke: A Comprehensive Systematic Review And Meta-Analysis	Abdulrahim Alrasheed Tala Aljahdali Israa Alghafli Ghadeer Alghafli Majd Almuslim Noor AlMohishand Majed Alabdali
2	Psychological Problems Faced By Families Of Stroke Patients During Rehabilitation And Improving The Quality Of Life Of Patient	Dr.Mahmoud Fattouh Mohamed
3	Age- And Sex-Stratified Trends In Ischemic And Hemorrhagic Stroke Outcomes In Saudi Arabia (1990–2023): Secondary Analysis Of National Estimates	Dr.Ghadah N Al Mutair
4	Synthesis And Development Of A Novel First-In-Class Cofilin Inhibitor For Neuroinflammation In Hemorrhagic Brain Injury	Saad M Alenezi Saleh I Alaqel
5	The Relationship Between Stroke Patients Knowledge And Emergency Arrival Time Among Adult Stroke Patients	Arwa Al Hamed Nour Al Otaibi Dr. Elmer Catangui
6	Stroke Burden In Saudi Arabia (1990–2023) A Secondary Retrospective Analysis Of Incidence, Mortality, And DALY Trends	Mohammad Shakil Ahmad Ritu Kumar Ahmad

الملصقات العلمية المشاركة (Poster Presentation)

No	Poster Title	Authors
7	The Effectiveness Of Using Frankincense Resin In Improving Heart Function And Reducing The Risk Of Heart Attacks And Strokes In Laboratory Animals	Lobna Saad Mohammed Abd Elmeged
8	Incidence And Association Of Seizures In Stroke Patients Undergoing Endovascular Therapies	Alizai MHK Tasleem S Hashim H Afzal K Tahir M Farooq S
9	Premature Mortality From Stroke In Saudi Arabia (1990–2023): Temporal Trends In Mortality And Years Of Life Lost Using Secondary Data	Riyaz Ahamed Shaik
10	Effectiveness Of Motor Relearning Program In Sit-To-Stand Transfer And Activities Of Daily Living Among Chronic Stroke Patients- Randomized Control Trial	Khadijah Abdulrahman Alfaleh Abdul Rahim Shaik Karthick Balasubramanian Mohammed M. Alshehri Ramya Ramasamy Sanjeevi Vandana Esht Weam Okab Alsalem Abdulrhman M. Shahhar Shaima A. Alothman

الملصقات العلمية المشاركة (Poster Presentation)

No	Poster Title	Authors
11	Review Of Stroke Medical Imaging: From Detection To Decision-Making	Alaa Ibrahim Nagi Ibrahim Rahma Abdalla Marwa Selmi Sami N. A. Elgak
12	Challenges And Opportunities In Integrating AI Technology Into Medical Imaging For Stroke Diagnosis	Yousif Abdallah
13	Perceptions And Practices Of Contemporary Physiotherapy Approaches For Upper Limb Rehabilitation Post-Stroke: A Cross-Sectional Survey Of Physiotherapists In Saudi Arab	Anas M. Al Hafidh Abdul Rahim Shaik
14	Stroke Shield: Intelligent Platform For Stroke Prevention And Medical Monitoring	Abdullah Almutairi Yazeed Alqashami Dhay Almutairi Aljazi Almaghlouth Almha Alanazi Munerah Aljedaie Abdulaziz Alkathiry
15	Pre-Stroke Frailty And Post-Stroke Quality Of Life In Older Adults With Acute Stroke In Saudi Arabia	Reham Lafi Alharbi Abdulaziz Abdullah Alkathiry

الملصقات العلمية المشاركة (Poster Presentation)

No	Poster Title	Authors
16	AI-Based Prediction Of Large Vessel Occlusion In Acute Ischemic Stroke: A Systematic Review	Dhay Almutairi Abdullah Almutairi Maali Almutairi Dalal Almutairi Abdullah Alanazi Abdullah Alamoudi
17	Aerobic Exercises Prescription In Stroke Rehabilitation: A Survey Among Physical Therapists In Saudi Arabia	Abdullah S. Alrashidi Abdulaziz A. Alkathiry
18	Physical Activity Intensity And Volume In Saudi Patients With Type 2 Diabetes. A Comparison Study	Dr. Naif Alrashdi PhD. Maha Alotaibi DPT. Shahad Almutiri DPT. Ghader Alqahdi DPT. Shahad Almotrfi DPT. Noura Alotaibi DPT. Marwan Khormi, PT, MSc

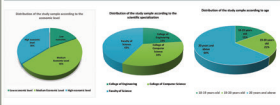
Introduction & Aim

Introduction:
Stroke significantly affects the family, as it impacts extent beyond the individual patient to encompass all family members. A stroke can lead to substantial changes in family roles, with one member often becoming the primary caregiver, resulting in feelings of stress and exhaustion. This shift in roles can cause tensions and conflicts among family members (Bohème et al., 2021).
Studies show that many caregivers experience psychological and physical stress due to their caregiving responsibilities, which negatively impacts their mental health and quality of life. Additionally, changes in the patient's psychological state, such as depression and anxiety, directly affect the rehabilitation process, as they can reduce the motivation to engage in therapy (Al-Saghr et al., 2023).
In this context, the current study aims to identify the psychological problems faced by the families of patients suffering from stroke during rehabilitation and to improve the quality of life for the patients.

Study Problem:
The problem of the present study can be formulated in the following question: What are the most important psychological problems facing the families of patients with stroke when rehabilitating and improving the quality of life for patients? The main question arises from the following sub-questions:
What is the order of the psychological problems facing the families of stroke patients when rehabilitating and improving the quality of life for patients?
Are there differences between the sample members from the families of patients with stroke in terms of the psychological problems they face, according to the economic level?
Are there any differences between the sample members from the families of patients with stroke in terms of the psychological problems they face, according to the scientific specialization?
Are there differences between the sample members from the families of patients with stroke in terms of the psychological problems they face according to age?
Aim of the study:
The current study aims to identify the psychological problems faced by the families of patients suffering from stroke during rehabilitation and to improve the quality of life for the patients.

Methodology

Research design:
Non experimental descriptive research design was used to conduct the current study.
Setting:
The study was conducted in students from scientific colleges (Faculty of Science, Faculty of Computer, Faculty of Engineering) at the Islamic University of Madinah.
Population:
The present study population comprised all of students from scientific colleges (Faculty of Science, Faculty of Computer, Faculty of Engineering) at the Islamic University of Madinah according to variables economic level, scientific specialization, and age.



Results

Table (2): The order of psychological problems facing the families of stroke patients upon rehabilitation and improves the quality of life of patients

Psychological problems	N	%	Ranking
Concern about the patient's health status	15	24.6	1
Feeling afraid of the future	11	18.0	2
Psychological burden	9	14.8	3
Feeling isolated	7	11.5	4
Feeling depressed	8	13.1	5
Low morale of family members	6	9.8	6
Challenges of Communicating with the Patient	5	8.2	7

Table (3): It shows the significance of the differences between the average scores of the sample members from the families of patients with stroke in relation to the psychological problems they face, according to the economic level.

Economic Level	Mean	SD	Significance	P-value
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000

Table No. (4): It shows the significance of the differences between the average scores of the sample members from the families of patients with stroke in relation to the psychological problems they face, according to the scientific specialization.

Scientific Specialization	Mean	SD	Significance	P-value
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000

Table No. (5): It shows the significance of the differences between the average scores of the sample members from the families of patients with stroke in relation to the psychological problems they face, according to their age.

Year of Life	Mean	SD	Significance	P-value
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000
After feeling depressed	2.15	1.08	0.000	0.000
After feeling isolated	2.15	1.08	0.000	0.000
After feeling afraid of the future	2.15	1.08	0.000	0.000

Discussion

Table (2) highlights the psychological challenges faced by families of stroke patients during the rehabilitation process. The most significant concern is the patient's health status, with 24.6% of families expressing ongoing anxiety about recovery and potential complications. This is followed by a fear of the future (18.0%), reflecting worries about how changes in the patient's life will impact daily routines. The psychological burden of caregiving (14.8%) also poses a challenge, leading to exhaustion among family members. Feelings of isolation (11.5%) arise due to communication difficulties with the patient, while depression (13.1%) is prevalent due to constant psychological stress. Additionally, low morale (9.8%) among family members affects their ability to support the patient, and communication challenges (8.2%) further exacerbate feelings of frustration and isolation.
The data presented in Table (3) indicates significant differences in the psychological challenges faced by families of stroke patients based on their economic status. Families with higher economic income reported greater anxiety regarding the future, with an average score of 14.54, suggesting that improved economic conditions may lead to heightened expectations about recovery. Concerns about the patient's health were also more pronounced among those with higher incomes, averaging 15.55, reflecting worries about the potential for incomplete recovery. Additionally, individuals from higher economic backgrounds experienced a notable decline in morale (15.40), indicating that psychological stress may be more intense in these households. Depression levels were higher in these families, with an average score of 22.36, suggesting that better economic conditions may correlate with increased psychological challenges that necessitate specialized interventions. Furthermore, feelings of isolation were more prevalent (18.80) among those with higher economic status, possibly due to the social changes resulting from the stroke. Although the psychological burden was relatively lower (14.18) in wealthier families, it remains a significant concern, highlighting the need for psychological support. Lastly, communication challenges were less impactful (11.56) in higher-income households, indicating that they may have better resources to manage these difficulties.

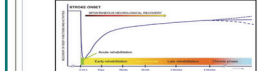
The data in Table (4) reveals significant differences in the psychological challenges faced by families of stroke patients based on the scientific specialization of the caregivers, particularly favoring students from the Faculty of Science. Those from the Faculty of Science reported the highest average score for fear of the future (14.53), indicating that academic and professional expectations may contribute to their anxiety. Concerns about the patient's health were also notably high among this group, with an average score of 15.73, reflecting deep worries about their loved ones' well-being. Additionally, individuals from the Faculty of Science experienced a significant decrease in morale (14.42), suggesting heightened psychological stress. The average depression score for this group was 21.76, indicating that they may face greater psychological challenges that require specialized interventions. Feelings of isolation were prevalent (18.00), possibly due to the social changes brought about by the stroke. Although the psychological burden was somewhat lower (14.23) in this group, it remains a significant issue, highlighting the need for psychological support. Lastly, communication challenges were less impactful (11.56) for those in the Faculty of Science, suggesting they may have better resources to manage these difficulties.

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Introduction & Aim

Stroke (CVA) is a major global cause of disability and death, with ischemic strokes making up over 60% of cases.
Current treatments have limitations, including narrow treatment windows and limited recovery potential.



Stem Cell Therapy (SCT) is emerging as a promising approach for ischemic stroke management.
Various stem cell types are used to promote tissue repair and functional recovery.
Early clinical trials showed promising but inconsistent results.
Concerns remain regarding outcome variability and safety.

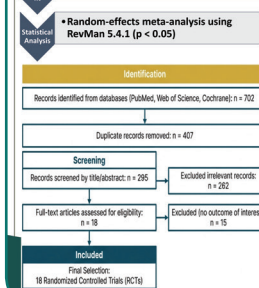
This meta-analysis Aim:-

- Does it improve recovery after ischemic stroke?
- Is it safe for stroke patients?
- Does the limit influence functional outcomes?

Methodology

Meta-analysis of randomized controlled trials according to PRISMA 2020 Guidelines.

- PubMed, Web of Science, and Cochrane Library
- PCts in adults with ischemic stroke receiving SCT, reporting functional or neurological outcomes
- Risk of bias Cochrane RoB 2.0 with subgroup and sensitivity analyses
- Random-effects meta-analysis using RevMan 5.4.1 (p < 0.05)



Results

Effects of SCT on Stroke Severity

Stroke Severity Metric: NIH Rankin Scale (mRS)
Verdict: No significant difference P-value: 0.28 (Insignificant).
Insight: No immediately reverse the initial neurological deficit score compared to controls.

Effects of SCT on Disability

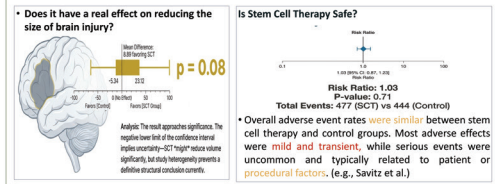
Disability Metric: Modified Rankin Scale (mRS)
Verdict: Significant Improvement P-value: < 0.00001 (Highly Significant).
Insight: Greater functional independence and reduced disability.

Does SCT Improve Daily Function?

Significantly improved in daily functional independence, as measured by the Barthel Index (MD = 12.00; 95% CI: 4.00-20.00; P = 0.007).

Does SCT Improve Motor Function?

It significantly improved motor recovery compared with controls, demonstrated by higher Fugl-Meyer Assessment scores (MD = 18.16; 95% CI: 6.58-29.75; P = 0.03).



Discussion

The Clinical Implications of Our Findings

- SCT improved functional outcomes but did not reduce stroke severity.
- Early administration, within two months, appeared more effective.
- The most consistent benefits and safety were observed with using mesenchymal stem cells.
- Personalized stroke treatment depends on patient-specific factors, requiring targeted selection, tailored IV vs. IA delivery methods improve efficacy, but standardized protocols are needed due to SCT variability.

How Do We Compare with Previous SCT Reviews?

- Included only RCT which demonstrated consistent functional improvements.
- Examining treatment timing, with findings suggesting greater benefit from early administration.
- Limitations: Study heterogeneity and limited long-term safety data may affect generalizability.

What Should Future Research Focus On?

- Standardized protocols for consistency.
- Optimize delivery methods & timing.
- Identify ideal targeted patient subgroups.
- Long-term follow-up studies.

Conclusion

SCT is both effective and safe for stroke patients, with improvements in motor function and daily living activities, while highlighting the importance of further research to optimize patient selection, treatment timing, and protocols.

References & Publication link



جامعة المجمعة
Majmaah University

Synthesis and Development of a Novel First-in-Class Cofilin Inhibitor for Neuroinflammation in Hemorrhagic Brain Injury

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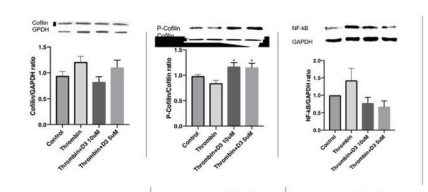
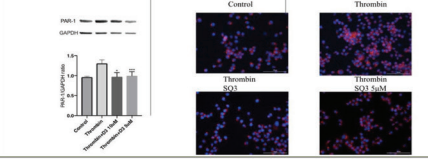
جامعة البحوث الشمالية
Northern Border University

4

Introduction & Aim

Intracerebral hemorrhage (ICH) is a fatal condition that kills thousands of people annually and is associated with the highest mortality among stroke subtypes. Survivors often have major neurological impairment, ICH-induced injury is classified as primary injury occurs due to the spontaneous rupture of cerebral vessels, and secondary, injury overtakes the primary when blood components such as hemin, iron, and thrombin infuse into the brain parenchyma. Cofilin, an actin binding protein, plays an essential role in the dynamic turnover of actin filaments. Cofilin plays a critical role in inflammation and neuronal cell death. SZ-3 is a first-in-class small-molecule inhibitor of cofilin to target secondary complications of ICH.

Results

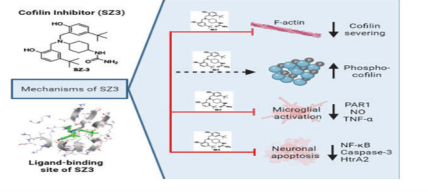



Methodology

- In silico design and optimization of the cofilin inhibitor SZ-3.
- In vitro ICH model using HMC-3 microglial and SH-SY5Y neuronal cell lines.
- Induction of neuroinflammation with LPS and thrombin.
- Evaluation of cofilin activity, cell viability, and inflammatory pathways using F-actin assay, MTT, and Western blot

Discussion

SZ-3 acts as a neuroprotective agent by inhibiting cofilin, which reduces microglial activation, inflammatory mediator release, and cell migration. By downregulating PAR-1, NF-κB, and apoptosis-related pathways such as caspase-3 and HtrA2, SZ-3 significantly decreases neuronal injury and cell death following hemorrhagic brain injury.



References





جامعة المجمعة
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Age- and sex-stratified trends in ischemic and hemorrhagic stroke outcomes in Saudi Arabia (1990–2023): secondary analysis of national estimates

Dr Ghadah N Al Mutairi

Majmaah University college of medicine



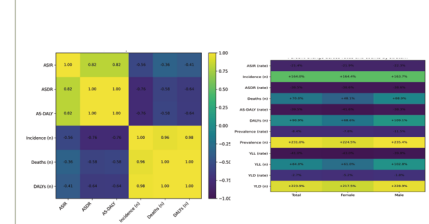
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3

Introduction & Aim

Sex differences add a further layer of complexity. Biological factors, differential exposure to risk determinants, and disparities in care pathways can generate sex-specific patterns in stroke incidence, mortality, and disability, with potential variation by subtype and age band [1-5]. Importantly, sex contrasts based on age-standardized rates may diverge from sex contrasts in absolute counts when population composition differs by sex or when age distributions shift over time [6-10]. For health-policy translation, this distinction is non-trivial: prevention strategies target rate reductions, whereas health-service planning must anticipate absolute volumes of acute presentations and chronic disability. Despite the relevance of these considerations, analyses that simultaneously describe long-run trajectories in stroke outcomes by sex and age structure, while differentiating IS, ICH, and SAH, remain comparatively limited for Saudi Arabia using a unified, internally consistent estimation framework [5,7,9-14]. In this context, the present study used nationally parameterized secondary estimates to quantify age- and sex-stratified patterns in ischemic and hemorrhagic stroke outcomes in Saudi Arabia over 1990–2021 and to extend short-horizon trajectories into 2023 using time-series forecasting, thereby supporting subtype-appropriate prevention and service planning.

Results



Methodology

Study design and setting
A retrospective secondary analysis was conducted to quantify long-term trends in stroke outcomes in Saudi Arabia using nationally derived estimates for the period 1990–2021, with model-based extension of subtype trajectories into 2023–2025. The analytic framework was designed to assess temporal change in burden while explicitly characterizing heterogeneity by sex and pathological subtype.

Data source and case definitions
Stroke outcomes were obtained from Global Burden of Disease (GBD) derived national estimates parameterized for Saudi Arabia. Stroke was evaluated as total stroke and by pathological subtype, including ischemic stroke (IS), intracerebral hemorrhage (ICH), and subarachnoid hemorrhage (SAH). Outcomes were defined in accordance with the estimation framework used to generate the national series, and subtype categories were treated as mutually exclusive to allow subtype-stratified comparisons where outputs were available.

Outcomes and measures
The primary endpoints included incident cases and age-standardized incidence rates, prevalent cases and age-standardized prevalence rates, deaths and age-standardized death rates, disability-adjusted life years (DALYs) and age-standardized DALY rates, and their components—years of life lost (YLLs) and years lived with disability (YLDs)—each reported as both counts and age-standardized rates per 100,000. Uncertainty was related as 95% uncertainty intervals (UIs) as provided by the underlying estimation outputs and was carried through descriptive reporting and model-based comparisons.

Discussion

The study clarified that long-run improvements in age-standardized stroke incidence, mortality, and DALY rates in Saudi Arabia co-existed with substantial growth in absolute incident cases, deaths, and disability burden, thereby demonstrating that risk reduction did not translate into proportional reductions in health-system workload. The concurrent expansion of prevalence and YLD counts indicated that survivorship and chronic post-stroke disability were likely to constitute an increasingly large share of total burden, shifting service needs beyond acute care toward longitudinal rehabilitation capacity, secondary prevention, and community-based support. The persistence of sex differences—particularly the stable male excess in incidence rates and the divergence between sex-patterned rates and absolute counts—provided a planning-relevant signal that prevention and care pathways needed to be assessed using both standardized metrics and event volumes, rather than either in isolation. The forecasting extension into the early 2020s further implied that near-term service requirements would remain sensitive to demographic momentum and could continue to rise even under improving standardized rates, supporting the future utility of routine, subtype-aware surveillance linked to scalable resource planning for hyperacute stroke pathways, stroke-unit staffing, rehabilitation coverage, and long-term disability services.

The study demonstrated that standardized stroke burden in Saudi Arabia declined over the long term, yet the absolute number of stroke events and the cumulative disability burden increased substantially, consistent with demographic expansion and population ageing. The findings indicated that progress in reducing underlying risk had not eliminated growth in total health-system demand and that future burden was likely to be increasingly shaped by survivorship and chronic functional impairment. Sex-patterned remained stable for incidence at the rate level while absolute outcomes reflected population structure, reinforcing the need to interpret stroke epidemiology through both standardized rates and counts to inform balanced prevention and service delivery strategies.

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Stroke burden in Saudi Arabia (1990–2023)
A secondary retrospective analysis of incidence, mortality, and DALY trends

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جامعة المجمعة
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Introduction & Aim

Stroke is a major cause of early death and chronic disability. Its burden in a population is influenced by aging, evolving risk factors associated with heart and metabolic disease, and the ability of health systems to deliver rapid acute care and effective prevention following a stroke [1]. As fertility rates decline and life expectancy increases, there are likely to be more cases of noncommunicable diseases and stroke in older people. It may be that age-standardized rates decline while the absolute number of events increases because the population size is increasing and aging [2]. Thus, in national burden reports, incidence, death, and disability should be presented together, and the interpretation of age-standardized rates should be done in relation to absolute numbers so we do not confuse real risk reduction with population growth [3].

The significance of DALYs (disability-adjusted life-years) in stroke is that improved survival can shift the burden from mortality to long-term disability, rather than eliminating it. By considering subtypes—ischemic stroke, intracerebral hemorrhage, and subarachnoid hemorrhage—burden can be better aligned with prevention and service requirements. Accordingly, this study employed GBD national estimates for Saudi Arabia, incorporating appropriate WHO and demographic information, to present trends in stroke incidence, mortality, and DALYs from 1990 to 2023, by subtype, and explore age distributions, then projected the series forward to 2020–2023 using time-series forecasting.

Results

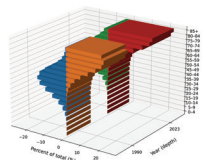


Figure 1: Age-pattern shift in stroke burden (1990 vs 2023). Three-dimensional mirrored bar display of age-group composition, with negative bars representing the proportion of incident cases and positive bars representing the proportion of deaths within each age band; depth separated 1990 and 2023 to visualise burden concentration in older ages.

Methodology

Study design and setting
A review of data from 1990 to 2023 was conducted to assess the long-term trends of stroke in Saudi Arabia. The study utilized the country's data each year, with annual summaries from 1990 to 2019 and projections from 2020 to 2023 through time series analysis.

Data source and case definition
The study utilized country-level estimates from the Global Burden of Disease (GBD). Outcomes for stroke were defined according to GBD stroke definitions and were examined both in aggregate and by subtype: ischemic stroke (IS), intracerebral hemorrhage (ICH), and subarachnoid hemorrhage (SAH). Estimates were provided as annual point estimates with uncertainty intervals (UIs) to represent the uncertainty of estimation.

Outcomes and measures
The primary outcomes comprised (i) age-standardized incidence rates (ASIR, per 100,000 population) and incident counts, (ii) age-standardized death rates (ASDR, per 100,000 population) and death counts, and (iii) age-standardized disability-adjusted life year (DALY) rates (per 100,000 population) and total DALYs. DALYs were interpreted as the sum of years of life (YLL) due to premature mortality and years lived with disability (YLD). Subtype-specific incidence, mortality, and DALY metrics were analyzed by IS, ICH, and SAH, and age-patterns were summarized using predefined age bands.

Discussion

The research provided a clear and long-term perspective on stroke in Saudi Arabia by examining incidence, deaths, and disability as a whole, using both age-standardized rates and numbers from 1990 to 2023. It was important because it demonstrated how the rates of risk and death are not the same as the increasing number of events due to the increasing number of people living longer. This is why the standardized rates can decrease even as the number of new cases, deaths, and total disability-adjusted life years (DALYs) increase. It was useful to view both the rates and the numbers because it helped with health planning by showing that future needs will depend not only on the effectiveness of prevention but also on the increasing number of survivors and the continued disability, especially in older patients. The breakdown of the information by type of stroke helped to identify the priorities in practice because the biggest burden will probably be addressed by better management of cardiometabolic risk factors and acute stroke care, while the continued bleeding problems still require excellent critical care and neurosurgery. The projection into the future to 2023 made the policy relevance more useful because it provided a clear continuation of the trend for short-term planning, such as the demand for stroke units, rehabilitation personnel, and follow-up prevention programs.

On the basis of the observed divergence between declining age-standardized rates and rising absolute counts, the study supported prioritizing track-trial strategies that simultaneously intensified upstream vascular risk reduction and expanded downstream capacity for chronic care. Recommendations included strengthening population-level detection and control of major cardiometabolic risks through primary-care-based screening, treatment, intensification, and adherence support; improving pre-hospital recognition and referral pathways to reduce time-to-treatment; scaling organized stroke-unit care and evidence-based acute management protocols; and investing in rehabilitation infrastructure and workforce to match the increasing absolute disability burden, particularly among older adults. The findings also supported implementing standardized national stroke surveillance with consistent subtype reporting and routine performance indicators, enabling continuous monitoring of incidence, case fatality, recurrence, functional outcomes, and service utilization to guide iterative resource allocation and quality improvement.

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3. Mellor, R. M., et al. (2015). Awareness of stroke symptoms and response to stroke: A systematic review. *European Journal of Neurology*, 22(5), 781–791.

6



The Relationship between Stroke Patients Knowledge and Emergency Arrival Time among Adult Stroke Patients

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Introduction & Aim

Stroke is a leading cause of morbidity and mortality in the Kingdom of Saudi Arabia and worldwide, requiring urgent medical intervention to minimize disability and improve patient outcomes. The emergency time arrival is crucial, particularly for patients who are eligible for thrombolytic therapy, which is most effective within the first 4.5 hours of symptom onset.

This study aims to assess the level of adult's stroke patients' knowledge and its impact on their emergency arrival time between January 2024 to September 2025 at King Abdul-Aziz Medical City, inpatient area- Riyadh

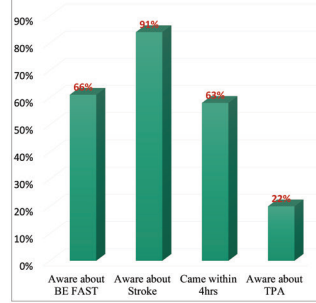
Results

A total sample of 546 stroke patients were included. Preliminary findings suggest that patients with higher stroke awareness were significantly more likely to arrive within 4.5-hours treatment window. Conversely, those with limited knowledge of stroke symptoms and emergency response often experienced delayed hospital arrival. Common barriers for delayed arrival time included misinterpreting symptoms, lack of awareness about thrombolysis, and reliance on self-care before seeking medical attention (78%).

Methodology

A cross-sectional study was conducted at King Abdul-Aziz Medical City, inpatient area - Riyadh, among adult stroke patients. Data on patients' knowledge of stroke BE FAST, and the importance of early hospital arrival were collected using structured interviews. Arrival time was classified as early (<4.5 hours) or delayed (≥4.5 hours).

Stroke Patients Knowledge



Knowledge Category	Percentage
Aware about BE FAST	66%
Aware about Stroke	91%
Came within 4hrs	63%
Aware about TPA	22%

References

1. World Health Organization. (2023). Stroke: prevention, treatment and rehabilitation.
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3. Mellor, R. M., et al. (2015). Awareness of stroke symptoms and response to stroke: A systematic review. *European Journal of Neurology*, 22(5), 781–791.

Discussion

Stroke knowledge plays a vital role in determining emergency arrival time. Public health initiatives focusing on stroke education and symptom recognition are essential to reduce pre-hospital delays, which will result in improving patients' outcome.

5

Introduction & Aim

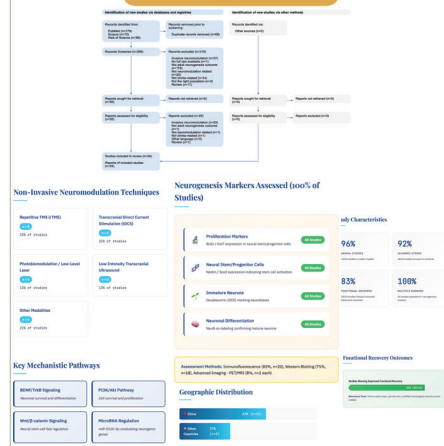
- Stroke remains a leading cause of disability worldwide, with limited therapeutic options to promote neural repair and functional recovery.
- Adult neurogenesis, the formation of new neurons from neural stem/progenitor cells, represents a promising endogenous repair mechanism that can be enhanced through non-invasive neuromodulation techniques.
- While preclinical evidence suggests that interventions such as transcranial magnetic stimulation and transcranial direct current stimulation may promote neurogenesis in the subventricular zone and hippocampus following stroke

Aim: To systematically map and synthesize the available evidence on adult neurogenesis following stroke using non-invasive neuromodulation techniques, including the types of interventions studied, neurogenesis markers assessed, mechanistic pathways involved, and functional outcomes reported.

Methodology

- This scoping review followed the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guidelines.
- A comprehensive literature search was conducted across three databases (PubMed, Scopus, and Web of Science) from inception to December 2025.
- Studies were included if they investigated adult neurogenesis following stroke using non-invasive neuroimodulation techniques and assessed neurogenesis markers through immunohistochemistry, immunofluorescence, Western blotting, or imaging modalities.
- Data extraction captured study characteristics, neuroimodulation parameters, neurogenesis markers (proliferation markers: BrdU/EdU; neuronal progenitor cells: Nestin/Sox2; immature neurons: DCX; differentiation markers: NeuN co-labeling), assessment methods, mechanistic pathways, and functional outcomes.

Results



Discussion

- All 24 studies demonstrated that non-invasive neuroendomodulation (tMS, tDCS, photobiomodulation, ultrasound) enhanced multiple stages of neurogenesis - proliferation, migration, differentiation, and neuronal survival in SVZ and hippocampus
- Despite diverse techniques, studies consistently implicated BDNF/TrkB signaling as the primary mediator of neuronal survival and differentiation in SVZ (e.g., *BDNF* expression increased in SVZ after cell survival), while *Wnt3* (stem cell fate), and microRNA regulation (*miR-551b-5p*) emerged as common mechanisms across different neuroendomodulation approaches
- 83% of studies (20/24) showed improved behavioral outcomes (Morris water maze, cylinder test, mNSS) alongside enhanced neurogenesis markers, suggesting clinical relevance
- Beyond neurogenesis, studies reported enhanced angiogenesis, synaptogenesis, and reduced apoptosis, suggesting multifaceted therapeutic mechanisms

Conclusion:

- This scoping review demonstrates robust preclinical evidence that non-invasive neuromodulation consistently enhances adult neurogenesis following stroke through convergent molecular mechanisms
- The near-exclusive reliance on animal models (96%) represents a critical translational gap

References

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Ichijo, Sadamitsu, et al. "Low-intensity pulsed ultrasound therapy promotes recovery from stroke by enhancing angio-neurogenesis in mice in vivo." *Scientific reports* 11.1 (2021): 4958.

Introduction & Aim

Introduction : Cardiovascular diseases, including heart attacks and strokes, are among the leading causes of mortality worldwide and are closely associated with inflammation and oxidative stress (Libby, 2002). These pathological processes contribute to endothelial dysfunction and progressive deterioration of cardiac and vascular function, increasing the global health and economic burden. Consequently, natural compounds with anti-inflammatory properties have gained increasing attention as complementary strategies for cardiovascular protection. Frankincense (*Boswellia* spp.) contains bioactive boswellic acids that inhibit key inflammatory pathways, particularly 5-lipoxygenase (Safahi et al., 1992; Ammon, 2006).

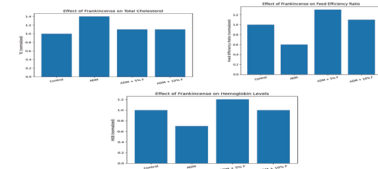
Aim: This study evaluated the potential of dietary frankincense supplementation to improve heart function and reduce cardiovascular risk factors in rats with adriamycin-induced cardiac injury by assessing growth performance, lipid profile, and hematological parameters.

Methodology

- Subjects:**
 - 24 adult male Wistar albino rats
 - Weight: 150 ± 10 g
 - Frankincense
- Experimental Design:**
 - Rats were randomly divided into 4 groups (6 rats per group) after an acclimatization period.
- Groups:**
 - **Control Group:** Healthy rats with no treatment.
 - **ADM Group:** Treated with astringency (ADM) to induce cardiac stress.
 - **ADM + 5% Frankincense:** Treated with ADM and fed a diet containing 5% Frankincense.
 - **ADM + 10% Frankincense:** Treated with ADM and fed a diet containing 10% Frankincense.
- Treatment Administration:**
 - Astringency was injected for **two weeks**.
 - Frankincense was added to the diet of the designated groups in specified quantities (5% and 10%).
- Measurements and Observations:**
 - **Feed efficiency ratio (FER)**
 - **Lipid profile:** Total cholesterol (TC), triglycerides (TG), LDL, VLDL
 - **Blood parameters:** Hemoglobin (HGB), red blood cells (RBC)
- Purpose:**
 - To evaluate the **cardioprotective effect of Frankincense** by observing its impact on heart function, blood lipids, and blood parameters after cardiac stress induction.

Results

Administration of Frankincense markedly improved several physiological and biochemical parameters in adriamycin-treated rats. The highest feed efficiency ratio (FER) was observed in the cardiac rats fed a diet supplemented with 5% Frankincense, indicating improved nutritional utilization compared to other treated groups. No significant differences were detected in serum lipid profile parameters, including total cholesterol (TC), triglycerides (TG), low-density lipoprotein (LDL), and very-low-density lipoprotein (VLDL) between rats receiving 5% and 10% Frankincense when compared with the positive control group. Hematological analysis revealed a significant improvement in hemoglobin and red blood cell counts (RBC) in rats fed 5% Frankincense, suggesting enhanced oxygen-carrying capacity and overall blood health. Overall, dietary supplementation with Frankincense—particularly at 5% concentration—demonstrated a protective effect against adriamycin-induced cardiotoxicity.



Discussion

Dietary supplementation with 5% frankenins improved feed efficiency and hematological indices (Hgb, RBC) in adriamycin-treated rats, suggesting cardioprotective effects. These benefits are likely mediated by **biossolic acids**, which exhibit anti-inflammatory and antioxidant properties, inhibiting pathways such as 5-lipoxygenase and NF- κ B (Bertocchi et al., 2018).

Chemopreventive mechanisms include **inhibiting carcinogenesis** and plaque instability, increasing the risk of **heart attacks and strokes**. By reducing inflammation, frankenins may help preserve cardiac and vascular function, thereby indirectly lowering ischemic risk (Ali et al., 2015; Karimi et al., 2024). While lipid profile changes were not statistically significant, trends indicate potential **cardio-protective benefits**.

Additionally, improved cardiac function and reduced systemic inflammation may enhance **blood flow to vital organs**, decreasing the likelihood of ischemic events. Frankenins's antioxidant effects may further **protect endothelial cells** and reduce oxidative damage, supporting overall cardiovascular health. These mechanisms collectively **strengthen the heart's resilience** and reduce stress on cardiac tissue, further limiting cardiovascular pathology induced by agents like adriamycin.

Moreover, frankenins may positively influence **immune modulation**, contributing to better systemic homeostasis and reducing inflammatory cytokines that accelerate vascular damage. By improving overall metabolic and hematological parameters, frankenins could create a synergistic effect that **strengthens overall cardiovascular health**.

These findings reinforce the potential of frankenins as a **complementary therapeutic agent** for mitigating cardiovascular and ischemic risk. However, translation to human health requires carefully controlled clinical trials to determine optimal dosing, efficacy, and long-term safety.

Frankenins research shows promise in enhancing cardiovascular function and reducing ischemic risk, acting through anti-inflammatory, antioxidant, and possibly metabolic pathways.

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Premature mortality from stroke in Saudi Arabia (1990–2023): Temporal trends in mortality and years of life lost using secondary data



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Introduction & Aim

Conventional monitoring of stroke burden has frequently emphasized mortality counts and death rates; however, mortality alone did not fully characterize premature health loss because identical numbers of deaths could correspond to materially different losses of remaining life-years depending on the age distribution of deaths. Years of life lost (YLLs) provided a complementary metric that captured the extent to which stroke mortality occurred earlier in the life course by weighting deaths according to standard life expectancy at the age of death, thereby enabling a more explicit focus on premature mortality as a component of total stroke burden. Because disability after stroke was common and often prolonged, disability components—summed as years lived with disability (YLDs)—also contributed meaningfully to overall health loss and could rise as survival improved, even if case-fatality declined. Consequently, a comprehensive interpretation of national stroke burden required concurrent consideration of mortality, premature mortality (YLLs), disability (YLDs), and their aggregation as disability-adjusted life years (DALYs), ideally expressed as both absolute counts and age-standardized rates to distinguish changes in population size and structure from changes in underlying risk. In settings undergoing demographic transition, it was plausible for age-standardized mortality and YLL rates to decline while absolute deaths and total YLLs increased, producing a policy-relevant divergence between improvements in risk-adjusted outcomes and expanding demand for acute services and long-term disability support. National time-series derived from standardized estimation frameworks were therefore useful for describing long-run trends and enabling internal consistency across measures when high-resolution, long-horizon registry data were incomplete or heterogeneous. In this context, the present work used national secondary estimates to characterize temporal patterns in stroke-related mortality and premature mortality in Saudi Arabia, emphasizing age-standardized trends and the contribution of YLLs within the overall stroke burden over the period for which quantified estimates were accessible, and it interpreted how premature mortality evolved relative to disability component at the population level.

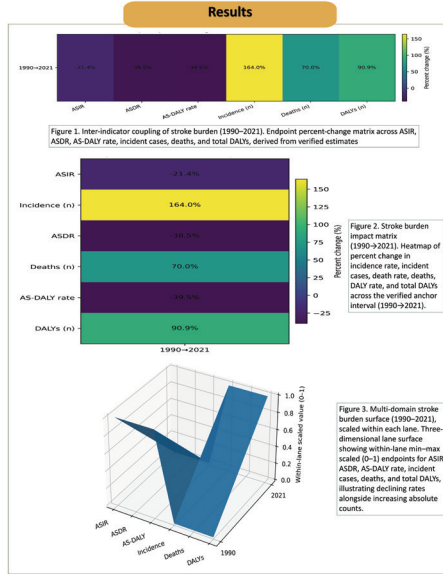
Methodology

Study design and analytical framework
A retrospective secondary analysis was conducted using publicly available national estimates of stroke burden for Saudi Arabia. The analysis was structured to describe long-term temporal trends across multiple burden metrics using internally consistent definitions and age-standardization procedures from a single estimation framework, and it emphasized premature mortality using YLL-based indicators alongside mortality rates and broader DALY measures.

Data source, scope, and evidence availability
Secondary estimates were obtained from Global Burden of Disease (GBD) 2021 outputs for Saudi Arabia. The time horizon of the analysis series was defined from 1990 through the last year for which quantified values were accessible from the sourced material; accordingly, trend reporting and tabulation were restricted to 2021 for the verified estimates.

Case definition and population coverage
Stroke outcomes were defined according to the stroke cause category and mapping rules employed within the GBD cause hierarchy, which integrated available cause-of-death and epidemiologic inputs into standardized cause-specific estimates at the national level. Estimates were analyzed for the total population and were additionally stratified by sex where available, using the same cause definitions and modeling assumptions across strata to preserve comparability over time.

Outcomes and burden measures
The primary outcomes were stroke deaths and YLLs, evaluated as both absolute counts and age-standardized rates per 100,000 population. YLLs were interpreted according to the standard GBD approach, in which the number of deaths at each age was multiplied by a reference life expectancy for that age, and these quantities were summed to yield total YLLs. To contextualize premature mortality within overall health loss, DALYs and YLDs were also extracted and summarized as counts and age-standardized rates, and DALYs were interpreted as the sum of YLLs and YLDs. Incidence and prevalence estimates were additionally summarized to support interpretation of rate-cohort divergence and to align descriptive outputs across fatal and non-fatal domains within the same estimation system.



Discussion

This secondary national analysis clarified that, over the verified period, the stroke burden in Saudi Arabia shifted toward a pattern in which age-standardized mortality and premature mortality declined substantially while absolute deaths and absolute years of life lost increased, consistent with population growth and ageing exerting upward pressure on total burden despite improvements in risk-adjusted rates. The findings were significant because they demonstrated that tracking deaths alone would have underestimated the persistence of premature health loss, whereas years of life lost captured the continuing dominance of fatal burden within total health loss and highlighted the gradual increase in the proportional contribution of non-fatal disability.

This combination implied that future stroke control would benefit from dual emphasis: sustaining primary and acute-care gains that reduced standardized death and YLL rates, while expanding long-horizon prevention and rehabilitation provision capable of moderating absolute burden and slowing the relative rise of disability. In addition, the observed divergence between decreasing standardized rates and increasing absolute totals implied that monitoring frameworks and resource planning needed to prioritize absolute volumes of events and long-term disability service demand, not only rate-based targets, and that subsequent evaluations should be strengthened by routine integration of subnational, age-specific, and subtype-stratified reporting to better identify residual high-burden strata and forecast service needs.

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Incidence and Association of Seizures in Stroke Patients Undergoing Endovascular Therapies

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Introduction & Aim

Introduction

Stroke served one of the primary causes of morbidity and mortality and continues as prevalent global health concern. According to World Health Organization, 2nd leading cause of death and 3rd leading cause of disability throughout the globe is stroke. Stroke is a leading global cause of mortality and long-term disability, and survivors often develop complications that worsen outcomes. Endovascular therapies (EVT), such as mechanical thrombectomy, have significantly improved survival and functional recovery in both ischemic and hemorrhagic stroke. However, post-stroke seizures remain an important and challenging complication following EVT, with reported incidence varying widely in the literature. The relationship between EVT and seizure risk, as well as the contributing clinical factors, is not yet fully understood.

Aim:

To determine the incidence of seizures in stroke patients undergoing endovascular therapy and to identify associated risk factors, including stroke type, severity, etiology, location, and patient age.

Methodology

Study design: Observational study conducted from April 2020 to April 2023.

Setting: Department of Neurology, Mardan Medical Complex, Pakistan.

Participants: 384 adult patients (>18 years) with acute ischemic or hemorrhagic stroke undergoing endovascular therapy (EVT).

Exclusion criteria: Pre-existing epilepsy, prior seizures, metabolic disorders, severe neurological conditions, or contrast allergy.

Data collection: Demographic data, clinical characteristics, stroke type, severity, location, and EVT details were recorded.

Seizure classification: Seizures categorized as early (<7 days) or late (>7 days) based on clinical and EEG findings.

Stroke classification: Ischemic stroke subtypes classified using TOAST criteria; CT/MRI used for diagnosis.

Statistical analysis: Chi-square and ANOVA tests applied using SPSS 23.0; p<0.05 considered statistically significant.

Ethics: Approved by institutional review boards with informed consent and data confidentiality ensured.

Results

Out of 384 stroke patients undergoing endovascular therapy (EVT), 25 patients (6.51%) developed post-procedure seizures.

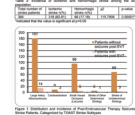
Ischemic stroke was significantly more common (82.8%) than hemorrhagic stroke (17.2%). Seizure occurrence was not significantly associated with age, gender, smoking status, or comorbidities such as hypertension, cardiac disease, and diabetes.

Large artery atherosclerosis was the most frequent ischemic stroke subtype associated with post-EVT seizures.

Stroke severity showed a significant association with seizure risk, while cortical involvement, hemorrhagic stroke, and younger age showed trends but were not statistically significant.

Early seizures after EVT were associated with a higher likelihood of seizure occurrence.

Stroke Type	Seizure Occurrence	Incidence (%)	p-value
Ischemic	Yes	82.8	0.001
Hemorrhagic	Yes	17.2	0.001



Risk factors	OR	95% CI	p-value
Stroke severity	0.1076	0.1076	0.001
Stroke severity	0.1076	0.1076	0.001
Cortical	0.2029	0.0222	1.8543
Young age	1.2692	0.1454	11.0767
Early seizures	2.5836	0.8204	0.0776

Discussion

This study demonstrated that post-endovascular therapy (EVT) seizures occurred in a small but clinically relevant proportion (6.51%) of stroke patients. The findings are consistent with previous studies reporting variable seizure incidence following EVT. Ischemic stroke, particularly large artery atherosclerosis, was the most common subtype associated with seizures. Although factors such as cortical involvement, hemorrhagic stroke, younger age, and early post-EVT seizures showed a tendency toward increased risk, most associations were not statistically significant, reflecting the complex and multifactorial nature of post-stroke seizures.

Importantly, stroke severity emerged as a significant factor influencing seizure risk. The absence of strong associations with common comorbidities suggests that seizure development is more closely related to stroke characteristics than baseline patient conditions. Early seizure occurrence may reflect acute cortical irritation or reperfusion injury following EVT. These findings emphasize the need for structured post-EVT neurological follow-up. Future multicenter studies with larger cohorts are required to clarify predictors of seizures and to develop reliable risk stratification models for post-stroke seizure prevention.

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Review of Stroke Medical Imaging: From Detection to Decision-Making
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Introduction & Aim

Strokes are a leading global cause of physical and mental disability, as well as mortality. They occur when a specific area of the central nervous system suffers damage due to vascular issues, resulting in various neurological deficits. Strokes can be classified into two main categories: hemorrhagic and ischemic strokes (IS). Ischemic strokes, which account for approximately 80% of all strokes, arise when a thrombus obstructs or occludes an artery, interrupting or reducing blood flow to brain tissue.

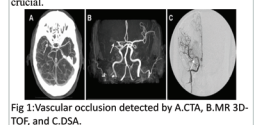


Fig 1:Vascular occlusion detected by A.CTA, B.MR 3D-TOF, and C.DSA.

Methodology

Protocol:This review article was conducted in accordance with PRISMA 2020 guidelines and included only full-text English-language studies published between 2015 and 2025.

Data retrieval :The authors initiated the data retrieval process with a comprehensive preliminary screening of each article, focusing on its title and abstract to determine relevance. Studies that corresponded with the research objectives and satisfied the established inclusion criteria were subsequently subjected to in-depth analysis. This approach facilitated the recognition of consistent patterns across the body of literature.

Database	Search Strategy	Hits
Pubmed	("imaging modalities" AND "ischemic stroke" AND "stroke imaging")	13
Science	("imaging modalities" AND "ischemic stroke" AND "stroke imaging")	296
Direct		
Scisearch	("imaging modalities" AND "ischemic stroke" AND "stroke imaging")	67

Results

These selected articles (75 publications) underwent an in-depth review to ensure a comprehensive evaluation carefully collecting a wide range of publications from trusted databases including Science Direct, PubMed, and SagePub. Following a rigorous three-step screening procedure, the research demonstrates that the visualization of blood clots that develop during an acute ischemic stroke can be enhanced by employing specific MRI protocols. The study was able to categorize various forms of clots by examining these factors. The study also discovered that advanced imaging techniques can assist in the selection of stroke patients for endovascular treatment (EVT).

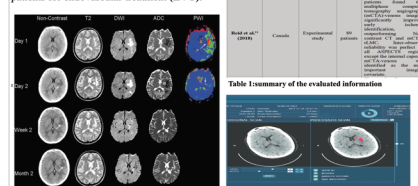


Fig2:Imaging of stroke CT and MRI

Fig 3: ASPECTS scoring

Discussion & Conclusion

Medical imaging techniques such as CT and MRI are essential for stroke patients to ensure accurate diagnosis and effective treatment. The integration of artificial intelligence can accelerate this process and reduce the likelihood of errors, especially when dealing with acute ischemic strokes.

Diagnostic imaging methods such as non-contrast CT (NCCT) and CT angiography (CTA) are commonly used to evaluate the degree of brain injury resulting from blockages. NCCT serves as the primary test in stroke assessment and has gained greater importance following the adoption of IV tPA therapy. When paired with NCCT, the ASPECTS scoring system is often applied to identify early changes across ten specific brain regions. The majority of interventionists adhere to stroke guidelines, favoring advanced imaging or CT/CTA for treatment decision-making. Finally, the investigation demonstrated that interventionists were more inclined to proceed directly to EVT in cases of M1 occlusion or wake-up strokes.

Conclusion:Advanced imaging tools such as CT and MRI—remain fundamental for achieving precise diagnosis and timely intervention in stroke care. Emerging technologies, including artificial intelligence, show strong potential for accelerating diagnostic workflows and reducing errors, especially in acute ischemic stroke management. Non-contrast CT, CTA,CTP, continue to serve as core components of stroke assessment, with the ASPECTS scoring system offering valuable information on early ischemic changes.

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Effectiveness of Motor Relearning Program in Sit-to-stand Transfer and Activities of Daily Living Among Chronic Stroke Patients- Randomized Control Trial

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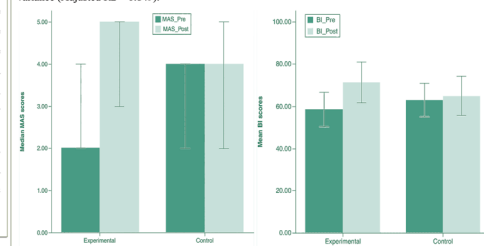
Introduction & Aim

Stroke is a clinically defined syndrome characterized by an acute, focal neurological deficit due to vascular injury. Strokes can result in various disabilities, including sensory and motor abnormalities, leading to difficulties with motor control, balance and posture. Physical therapists use various neurorehabilitation approaches to enhance the functional abilities and independence of stroke patients. The motor relearning program (MRP) is a task-oriented, self-monitored, structured program based on motor control theories and neuroplasticity used in the rehabilitation of stroke patients.

Aim: This study aimed to evaluate the effectiveness of MRP in improving sit-to-stand transfer and activities of daily living in individuals with chronic stroke.

Results

The experimental group demonstrated statistically significant improvements in both MAS and BI scores ($p < 0.001$), with large effect sizes ($r = -0.865$; for MAS, Cohen's $d = 1.46$ for BI). ANCOVA analyses revealed that baseline MAS scores (MAS pre) significantly influenced post-intervention outcomes ($F[1, 29] = 65.33, p < 0.001$), and the group effect remained significant after adjusting for MAS pre ($F[1, 29] = 41.89, p < 0.001$). The model explained 72.6% of the variance in MAS post scores (adjusted $R^2 = 0.707$), confirming the predictive strength of MRP. Similarly, BI post scores were significantly predicted by BI pre and group assignment ($F[1, 29] = 21.15, p < 0.001$), with the model accounting for 85.8% of the variance (Adjusted $R^2 = 0.849$).



The median and Mean differences in motor assessment scale scores and Barthel index between experimental and control groups.

Methodology

A single-blinded, multi-centered randomized controlled trial was conducted in Saudi Arabia involving 32 chronic stroke patients randomly assigned to experimental ($n = 16$) and control ($n = 16$) groups. The experimental group received 45 minutes of MRP combined with conventional physical therapy, while the control group received conventional physical therapy alone. Interventions were delivered three weekly over 6 weeks (18 sessions). Outcome measures included the Barthel Index (BI) and the sit-to-stand component of the motor assessment scale (MAS), assessed pre- and post-intervention.

Discussion

The current study is one of the few RCTs conducted in Saudi Arabia to determine the efficacy of MRP combined with CPT in improving overall function and STS capacity in patients with chronic stroke. The current study was compared to several other studies that used the following outcomes: BI and MAS to examine the impact of MRP and CPT on improving the functional movement of stroke patients. While some research produced different results, others produced outcomes that were comparable to the current study. The following explanations could be the cause of these discrepancies: the improvements in the experimental group can be attributed to the current study's combination therapy, which included MRP and CPT. Because the approach is based on dynamic systems theory principles, the previous studies concentrate on a variety of factors such as patients, tasks, and the environment. Also, the analysis identifies the critical and missing components required to complete the task successfully. The movements practiced and the numbers of repetitions performed were based on the task, and it was relevant to the patient's daily lives. As a result of this type of practice, repetition, and adaptation to daily activities, would have enhanced neuroplastic changes, neuronal connections, and engrams in improving patient functions more than control group interventions. **Conclusion:** The motor relearning program significantly improves sit-to-stand transfer and activities of daily living performance in chronic stroke patients.

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Perceptions and Practices of Contemporary Physiotherapy Approaches for Upper Limb Rehabilitation Post-Stroke: A Cross-Sectional Survey of Physiotherapists in Saudi Arabia.

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Introduction & Aim

After a stroke, 60-80% of patients report functional impairment in their upper limb. As a result, we need to assess the routinely used upper limb treatment for post-stroke patients using evidence-based practice. Post-stroke upper limb rehabilitation is crucial for recovery, yet approaches vary across physiotherapists based on factors such as region, experience, gender, and academic qualifications. More studies and evidence are needed in upper limb physical therapy rehabilitation to determine the optimal use of EBP by the physiotherapist, as well as the frequency and intensity of treatment. There have been no studies in Saudi Arabia about contemporary approaches for upper limb after a stroke among physiotherapists. Investigating these issues will add to our comprehension of contemporary upper limb after a stroke among physiotherapists and enhance evaluation, management and development, and patient care. This study assesses physiotherapists' perceptions on contemporary upper limb rehabilitation techniques for various levels of post-stroke severity. Study aim is to study physiotherapists' perceptions and practices of contemporary approaches for people with different severities of upper limb involvement after stroke in Saudi Arabia.

- To determine physiotherapists' practices of contemporary approaches in upper limb rehabilitation for various levels of post-stroke severity.
- To assess physiotherapists' perceptions of contemporary approaches in upper limb rehabilitation for various levels of post-stroke severity.
- To evaluate the correlation between different demographic variables, clinical practice variables, and contemporary physiotherapy approaches for upper limb rehabilitation.

Methodology

Study design
This research utilized a cross-sectional online survey approach. Ethical approval for the study was granted by the Scientific Research Ethics Committee at Majmaah University.

Sampling
The convenience sampling technique was utilized for survey distribution.

Inclusion criteria:
Physiotherapists involved treating stroke patients in Saudi Arabia. Physiotherapists with one-year professional experience. Licensed physiotherapists.

We determined that 396 participants to be recruited to achieve a 5% margin of error at a 95% confidence level.

The survey ask questions about demographics, content, frequency and duration of contemporary approaches to upper limb physiotherapy. An approval taken from Majmaah University ethical committee prior to the commencement of the study.

Demographic details, treatment frequencies and durations summarized using descriptive statistics. Interval level data reported using means and SD if they are normally distributed while ordinal and nominal data used median and ranges. The level of significance set at 0.05, with a 95% confidence interval.

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Results

sample included 376 physiotherapists, private sector (59.6%), outpatient settings (61.2%), Female 59.0% of the sample, while 41.0% were male. The most common treatment time for upper limb rehabilitation was 20-30 minutes (34.0%), and the majority of physiotherapists treated patients 3-4 days per week (45.2%). For severe cases, 18.1% of physiotherapists allocated 40-50 minutes per session. A significant proportion (48.9%) identified patient-related factors as a major limitation to treatment time. Male physiotherapists were more likely to use CIMT (27.3%) than females (14.4%), and the East Region showed the highest usage of electrical stimulation therapy (64.7%). Academic qualifications were significantly associated with treatment time per session ($p = 0.035$), with physiotherapists holding PhDs or MSc degrees more likely to allocate longer durations. Experience level was also a strong predictor of treatment duration ($p < 0.001$), with more experienced physiotherapists dedicating more time to upper limb rehabilitation.

Conclusion
It is concluded that physiotherapists' practices in upper limb rehabilitation are significantly influenced by their academic qualifications, years of experience, and regional and gender-based factors. The study highlights that physiotherapists with higher academic qualifications, particularly those with MSc or PhD degrees, are more likely to incorporate advanced rehabilitation techniques such as Constraint-Induced Movement Therapy (CIMT), electrical stimulation therapy, and GRASP therapy into their practice.

Discussion

The results of this study provide valuable insights into the practices and challenges faced by physiotherapists in Saudi Arabia, particularly concerning upper limb rehabilitation post-stroke. The findings reveal significant variations in treatment approaches based on factors such as region, gender, academic qualifications, and experience. These differences are crucial for understanding the diverse practices and potential areas for improvement in stroke rehabilitation within Saudi Arabia. The study identified regional differences in the duration of upper limb treatment. Physiotherapists in the North Region allocated the most time per session (average of 40 minutes), while those in the Central Region spent an average of 45 minutes per session. The results indicate northern physiotherapists work longer sessions because they treat less patients because of their advanced cases while central practitioners manage greater patient numbers which shortens their session durations. This discrepancy points to a need for more investigation into how region-specific factors, such as the number of available physiotherapists or the severity of cases, impact treatment duration. Rehabilitation therapy demonstrates significant variations among male and female patients. Patients treated differently alongside experience levels and confidence handling complicated cases possibly produce this disparity. Nine stroke survivor-partner participants across metropolitan, regional and rural areas in Queensland received qualitative data collection through three focus groups combined with two extensive interviews. Principles of grounded theory served as the analysis method. Stroke survivors enhance their upper limb recovery by maintaining sustained hopefulness during their adaptation to stroke-related lifestyles. Stroke patients maximize upper limb recovery through multiple strategies including staying committed and reaching out to others for assistance and continuing exercise aid and understanding the success of enduring success. The study presents meaningful details about upper limb recovery experiences following stroke incident. The analysis reveals a requirement to create rehabilitation approaches that fit individual stroke survivor goals while omitting operational restrictions on rehabilitation progress.

Stroke support groups demonstrate clear advantages which should be integrated into professional stroke recovery services. The research provides foundations which practitioners can use for developing and assessing upper limb training programs centered on stroke survivor needs.



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Challenges and Opportunities in Integrating AI Technology into Medical Imaging for Stroke Diagnosis

Yousif Abdallah
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2024

Introduction & Aim

Stroke is a leading cause of mortality and long-term disability in Saudi Arabia, placing a significant burden on the healthcare system and affected families. Annually, thousands of individuals in Saudi Arabia experience strokes, often resulting in paralysis, cognitive deficits, speech impairments, and reduced independence. Timely and accurate diagnosis is essential for preserving brain function and improving long-term outcomes, especially as stroke incidence rises in parallel with increasing rates of diabetes, hypertension, and cardiovascular disease. Artificial intelligence (AI) offers the potential to improve medical imaging by increasing diagnostic accuracy, reducing interpretation time, and supporting clinical decision-making in radiology. Specific AI models, such as deep learning and convolutional neural networks, have shown promise in stroke imaging, demonstrating the ability to surpass human radiologists in identifying ischemic lesions. Notable studies, such as Kim, J. G., et al. (2023), Peng, et al. (2024), Rai, A. T., et al. (2025), have highlighted AI's ability to enhance the detection and segmentation of stroke-related anomalies. Despite these benefits, the integration of AI into routine clinical practice faces several challenges. The key challenges include providing adequate clinician training, standardizing data across healthcare institutions, and ensuring the transparency and reliability of AI algorithms. This review aims to synthesize recent studies on AI applications in medical imaging for stroke diagnosis, evaluate their clinical benefits, and identify key challenges and future directions for clinical integration.

Methodology

This review conducted a comprehensive search of peer-reviewed studies from the past five years on AI applications in stroke diagnosis and imaging. Only studies evaluating AI in clinical settings were included to ensure relevance to current practice. The databases searched were PubMed, Google Scholar, IEEE Xplore, and MedRxiv, using keywords such as stroke, radiology, machine learning, medical imaging, and artificial intelligence. Studies were selected based on relevance, clinical applicability, and practical significance, with a focus on AI-based imaging tools that support stroke detection, classification, and clinical workflow.

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Pre-Stroke Frailty and Post-Stroke Quality of Life in Older Adults with Acute Stroke in Saudi Arabia

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Introduction & Aim

Frailty reflects a state of increased vulnerability due to reduced physiological reserve and may influence recovery and contribute to poorer outcomes following acute stroke. However, the association between pre-stroke frailty and post-stroke quality of life remains underexplored in Saudi Arabia.

The objective of this study was to examine the relationship between pre-stroke frailty and post-stroke quality of life in older adults admitted with acute stroke.

Results

During the study period, 249 patients with acute stroke were admitted, of whom 199 were excluded, resulting in a final sample of 50 patients. The sample consisted of 26 males (52.0%) and 24 females (48.0%), and the majority were Saudi nationals (n = 46, 92.0%). The mean age of patients was 68.38 ± 5.56 years, and the mean frailty score was 1.02 ± 0.99. The mean quality of life score was 46.60 ± 11.11. Most patients were pre-frail (60%), followed by non-frail (30%) and frail (10%). Higher pre-stroke frailty was significantly associated with lower post-stroke quality of life ($r = -0.381, p = 0.003$).

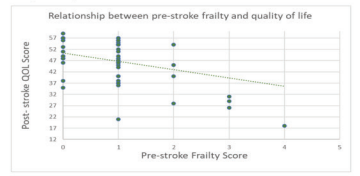


Figure 1. Scatter plot shows the relationship between pre-stroke frailty score and post-stroke quality of life. Higher pre-stroke frailty scores were associated with lower post-stroke quality-of-life scores.

Methodology

Study design and setting: A cross-sectional observational study included 50 patients who were admitted to the Acute Stroke Unit at King Fahad Specialist Hospital, Qassim, Saudi Arabia, between March 2025 and November 2025. The study was approved by the Ministry of Health, and informed consent was obtained from all participants.

Participants: older patients with acute stroke aged ≥60 years.

Outcome Measures: Pre-stroke frailty status was evaluated using the validated Arabic version of the FRAIL Scale, while post-stroke quality of life was assessed using the Arabic version of the 12-item Stroke-Specific Quality of Life scale (SS-QOL-12-AR).

Statistical Analysis: Spearman's rank correlation analysis was performed to examine the association between pre-stroke frailty scores and post-stroke quality-of-life outcomes.

Discussion

A key finding of this study is the negative association between pre-stroke frailty and post-stroke quality of life, indicating that higher pre-stroke frailty scores were associated with poorer post-stroke quality-of-life scores. This finding is consistent with previous studies reporting that pre-stroke frailty adversely affects health-related quality of life, functional independence, and recovery following stroke (Zhang et al., 2023; Memena et al., 2023; Nguyen et al., 2025). Patients with pre-stroke frailty often show baseline impairments in mobility, endurance, and functional capacity, which reflect reduced physiological reserve and limit their ability to adapt to the neurological and physical consequences of acute stroke. These pre-existing vulnerabilities may impact post-stroke quality-of-life outcomes by slowing functional recovery and delaying the regaining of independence (Memena et al., 2023; Rockwood et al., 2005).

Conclusion: Pre-stroke frailty was moderately and inversely associated with quality of life following acute stroke. Early frailty screening using simple, validated tools such as the FRAIL scale is recommended as part of acute stroke evaluation and may help identify patients at risk of poorer recovery and guide individualized rehabilitation planning.

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Stroke Shield: Intelligent Platform for Stroke Prevention and Medical Monitoring.

Abdullah Almutairi | Yazeed Alqashami | Dhay Almutairi | Aljazi Almaghlouth | Almha Alanazi | Munerah Aljedaie | Abdulaziz Alkathiry

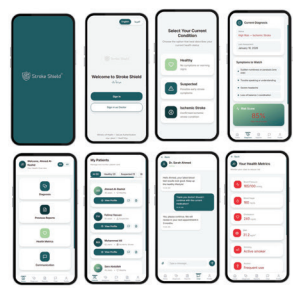
Majmaah University, Saudi Arabia.

Introduction & Aim

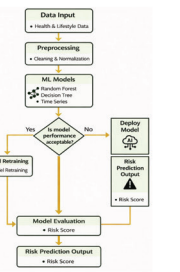
Stroke is one of the leading causes of death and long-term disability worldwide. Despite the availability of many health and fitness applications, there is currently no single digital platform that provides comprehensive stroke prevention, risk assessment, continuous monitoring, and post-stroke follow-up in one integrated system. Most existing applications focus on limited aspects such as general activity tracking or medication reminders, without addressing the full spectrum of stroke prevention and management. This gap highlights the need for an integrated solution that supports individuals before, during, and after a stroke.

The **Stroke Shield APP** aims to provide a comprehensive digital solution for stroke prevention and monitoring. The main objectives are to enable early identification of stroke risk factors, support continuous monitoring of vital health indicators, enhance patient awareness and adherence to preventive measures, and facilitate timely communication between patients and healthcare providers. The application also aims to support post-stroke patients through structured follow-up and rehabilitation monitoring, reducing the risk of complications and recurrence.

Results



Methodology



Discussion

The Stroke Shield APP addresses a critical gap in current digital health solutions by integrating stroke prevention, continuous monitoring, and post-stroke follow-up within a single intelligent platform. Unlike existing applications that focus on isolated functions such as activity tracking or medication reminders, Stroke Shield provides a holistic approach tailored to different user groups based on their health status.

The integration with the national "Sehahy" platform enhances data accuracy and continuity by enabling automated collection of vital health data, including blood pressure, glucose levels, and lifestyle indicators. This integration reduces reliance on manual data entry and supports more reliable long-term monitoring.

Furthermore, the use of machine learning-based risk prediction models allows early identification of high-risk patterns and abnormal trends. This supports timely clinical decision-making, improves patient awareness, and enhances adherence to preventive and rehabilitation measures.

From a healthcare perspective, Stroke Shield has the potential to reduce hospital readmissions, improve follow-up efficiency, and optimize resource utilization. As a scalable digital solution, the platform can support national digital health initiatives and contribute to reducing the overall burden of stroke on individuals and healthcare systems.

References



Algorithms: Random Forest, Decision Tree, Time Series Analysis, Rule-Based System, Statistical Analysis

AI: Python (Scikit-learn, Pandas, NumPy)

Backend: Laravel + MySQL

Security: JWT Authentication, HTTPS

Frontend: HTML5, CSS3, JavaScript, TailwindCSS, Chart.js

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Aerobic Exercises Prescription in Stroke Rehabilitation: A Survey Among Physical Therapists in Saudi Arabia

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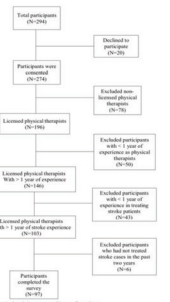
Introduction & Aim

Stroke is a significant public health concern in Saudi Arabia, with comprehensive rehabilitation crucial for recovery. Aerobic exercise has been well established to improve cardiovascular health, functional outcomes, and quality of life for stroke patients; however, its integration into current clinical practice faces challenges.

The study aims to investigate the clinical practices of physical therapists regarding the prescription and implementation of aerobic exercise in stroke rehabilitation programs in Saudi Arabia.

Methodology

This cross-sectional study of 97 licensed physical therapists who treated stroke patients in Saudi Arabia included a survey with 29 questions regarding respondents' profiles (n=10), screening (n=4), prescription (n=8), and implementation (n=7).



Results

A total of 87.6% of the physical therapists encountered barriers when using aerobic exercise in stroke rehabilitation, and 94.8% considered various factors when determining whether to prescribe aerobic exercise in stroke patients.

Regarding the choice of exercise modes, 92.8% of the physical therapists reported selecting specific modes of aerobic exercise, and 91.8% used safety screening tools when prescribing aerobic exercise.

Barriers to prescribing aerobic exercise, including patient depression and aerobic exercise not being the goal of most patients, were found to have significant associations.

The study also identified a significant relationship between exercise mode and session duration, with overground walking sessions tending to have longer durations.

Discussion

The main purpose of our study was to investigate the clinical practices of physical therapists regarding the prescription and implementation of aerobic exercise in stroke rehabilitation programs in Saudi Arabia.

Our specific goals were to 1) explore the barriers to the clinical utilization of aerobic exercise in adult stroke rehabilitation, 2) identify the factors considered in determining whether aerobic exercise should be prescribed for individual patients, 3) identify the modes of aerobic exercise training, and 4) assess safety considerations related to aerobic exercise in stroke rehabilitation.

Our hypotheses were as follows: 1) The presence of barriers decreases the probability of prescribing aerobic exercises by physical therapists in stroke rehabilitation in Saudi Arabia, and 2) the mode of aerobic exercise prescribed by physical therapists in Saudi Arabia for stroke rehabilitation affects the duration of each exercise session.

Our main findings were as follows:

First, 87.6% of the physical therapists encountered barriers when using aerobic exercise in stroke rehabilitation. Twenty barriers were identified, and their frequencies ranged from 7.2% to 61.9%.

Second, 94.8% of the physical therapists considered factors in determining whether or not to prescribe aerobic exercise in stroke patients. Thirteen factors were investigated, and their frequencies ranged from 18.6% to 74.2%.

Third, regarding the choice of exercise modes, 92.8% of the physical therapists reported selecting specific modes of aerobic exercise. Twelve modes were investigated, and their frequencies ranged from 15.6% to 75.6%.

Fourth, 91.8% of the physical therapists used safety screening tools when prescribing aerobic exercise. Twelve safety tools were assessed, and their frequencies ranged from 3.1% to 57.7%.

Fifth, the significant relationships of barriers to the prescription of aerobic exercise were identified, including patient depression and aerobic exercise not being a patient's goal.

Sixth, there was a significant relationship between exercise mode and session duration, with overground walking tending to occupy longer sessions.

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Introduction & Aim

Acute ischemic stroke is a leading cause of disability and mortality worldwide, with large vessel occlusion (LVO) representing one of the most severe and time-critical subtypes. Early and accurate identification of LVO is essential for rapid triage and timely intervention. Conventional clinical assessment and imaging interpretation may vary depending on expertise and availability, which can affect detection speed and accuracy.

Recent advances in artificial intelligence (AI) have shown promising capability in analyzing complex clinical and imaging-based features, particularly in stroke imaging and perfusion assessment. AI-assisted models have been increasingly applied to support LVO detection and prediction. This study aims to systematically review current evidence on AI-based approaches for predicting the presence of LVO in acute ischemic stroke patients and to evaluate their performance, strengths, and limitations.

Methodology

This study was conducted as a systematic literature review of published research on AI-assisted prediction and detection of large vessel occlusion (LVO) in acute ischemic stroke. The literature search was performed using the PubMed database only.

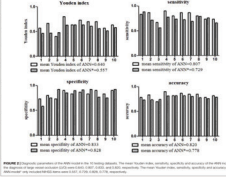
Search terms included combinations of: *artificial intelligence, machine learning, deep learning, large vessel occlusion, stroke imaging, perfusion imaging*.

Included studies were those that applied AI models to clinical and/or imaging-based features for LVO prediction or detection. Excluded articles included non-AI studies, non-stroke populations, editorials, and case reports. Extracted data included AI model type, imaging modality, input features, and reported performance metrics.

Results

The reviewed studies consistently demonstrated that AI-based models show strong performance in detecting and predicting the presence of large vessel occlusion (LVO) in acute ischemic stroke patients using imaging and clinical features. Deep learning and neural network approaches applied to CT angiography and CT perfusion imaging achieved high diagnostic accuracy, with several studies reporting area under the curve (AUC) values frequently above 0.85.

AI models using imaging-derived features were able to identify perfusion deficits and vessel occlusion patterns with sensitivity comparable to expert readers in selected settings. Studies integrating both clinical and imaging variables generally showed improved predictive performance compared with single-source models. In addition, prehospital and triage-focused AI models demonstrated promising ability to support early LVO prediction and patient routing decisions.



Discussion

Current evidence suggests that AI-assisted analysis of imaging and clinical features has meaningful potential in improving LVO detection and prediction in acute ischemic stroke. Most high-performing models rely on deep learning applied to computed tomography angiography (CTA) and perfusion imaging, indicating that imaging-derived features are central to accurate AI prediction. Combining multimodal inputs appears to further enhance model performance.

However, variability in datasets, study design, validation methods, and reported metrics limits direct comparison across studies. Many models are trained on single-center datasets, which may affect generalizability. In addition, real-world clinical integration, workflow impact, and external validation remain important challenges. Future research should focus on standardized evaluation frameworks, multicenter validation, and clinically deployable AI decision-support systems.

References





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AI-based prediction of large vessel occlusion in acute ischemic stroke: a systematic review

Dhay Almutairi | Abdullah Almutairi | Maali Almutairi | Dalal Almutairi | Abdullah Alanazi | Abdullah Alamoudi

Mjmaah University, Saudi Arabia



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Introduction & Aim

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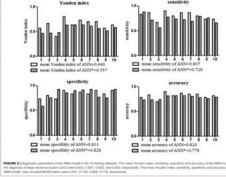
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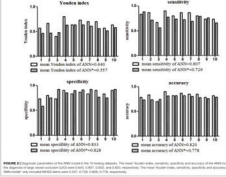
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Included studies were those that applied AI models to clinical and/or imaging-based features for LVO prediction or detection. Excluded articles included non-AI studies, non-stroke populations, editorials, and case reports. Extracted data included AI model type, imaging modality, input features, and reported performance metrics.

Results

The reviewed studies consistently demonstrated that AI-based models show strong performance in detecting and predicting the presence of large vessel occlusion (LVO) in acute ischemic stroke patients using imaging and clinical features. Deep learning and neural network approaches applied to CT angiography and CT perfusion imaging achieved high diagnostic accuracy, with several studies reporting area under the curve (AUC) values frequently above 0.85.

AI models using imaging-derived features were able to identify perfusion deficits and vessel occlusion patterns with sensitivity comparable to expert readers in selected settings. Studies integrating both clinical and imaging variables generally showed improved predictive performance compared with single-source models. In addition, prehospital and triage-focused AI models demonstrated promising ability to support early LVO prediction and patient routing decisions.



Discussion

Current evidence suggests that AI-assisted analysis of imaging and clinical features has meaningful potential in improving LVO detection and prediction in acute ischemic stroke. Most high-performing models rely on deep learning applied to computed tomography angiography (CTA) and perfusion imaging, indicating that imaging-derived features are central to accurate AI prediction. Combining multimodal inputs appears to further enhance model performance.

However, variability in datasets, study design, validation methods, and reported metrics limits direct comparison across studies. Many models are trained on single-center datasets, which may affect generalizability. In addition, real-world clinical integration, workflow impact, and external validation remain important challenges. Future research should focus on standardized evaluation frameworks, multicenter validation, and clinically deployable AI decision-support systems.

References



Introduction & Aim

- Type 2 Diabetes Mellitus (T2D) is highly prevalent in Saudi Arabia and has been linked to physical inactivity and sedentary behavior.
- Physical activity (PA) improves glycemic control, however, adults with T2D tend to be less active and more sedentary.
- Sedentary behavior has been shown to increase metabolic risk.
- Objective data regarding PA among Saudi patients with T2D remain limited.

Aim of the Study:

- To objectively evaluate PA levels and sedentary behavior among Saudi patients with T2D and healthy controls using digital health technologies (a wrist-worn accelerometer; Fig. 1)



Methodology

Study Design: Cross-sectional, comparative study

Participants: Saudi patients with T2D and healthy controls, aged 18-80 years and able to ambulate independently

T2D Group: Diagnosed with Diabetes Mellitus ≥1 year.

Healthy Group: No chronic medical conditions.

Exclusion Criteria:

- Age <18 years, pregnancy, musculoskeletal limitations, neurological or cardiovascular disorders affecting physical activity, or inability to provide informed consent.

Measurement Tool:

- For PA, we used a wrist-worn accelerometer (ActiGraph GT3X-BT) measuring daily step counts and various activity intensity (sedentary, light, and vigorous activity).

Procedure:

- Participants recruited from MU medical center, Diabetes clinic and the around community for healthy controls.
- Accelerometer worn for 7 consecutive days during waking hours.

Data Analysis:

- Descriptive statistics and group comparisons using independent t-test were used

Results

- We included 5 patients with T2D and 2 healthy participants.
- On average:
 - Diabetic population wore the device for 5.8 days with an average wear time of 863,1238 minutes.
 - Healthy population wore the device for 6.5 days with an average wear time of 941 minutes.

Demographic	Diabetic Population	Healthy Population
Sex	3 Males 2 Females	2 Males 0 Females
Age	61.4	23
Weight	83	74.5



Discussion

- This study demonstrates that adults with type 2TD exhibited higher levels of PA compared with healthy adults when measured objectively using accelerometry.
- This observation differs from findings reported by 1.Johansson et al. (2019) in Sweden, where adults with T2D demonstrated lower PA levels than non-diabetic controls.
- This difference may be explained by variations in population characteristics, healthcare engagement, or lifestyle behaviors following diagnosis.
- In Saudi Arabia, 2.Alzahrani et al. (2019) reported high levels of physical inactivity among adults with T2D, indicating that PA patterns may vary across regions and study contexts.

References

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التوصيات الختامية للمؤتمر



التوصيات الختامية للمؤتمر:

توصيات الختامية لمؤتمر الدولي الثاني للسكتة الدماغية بجامعة المجمعة

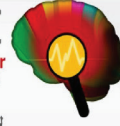
1. يؤكد المؤتمر على الحاجة الماسة إلى استقطاب وتأهيل كوادر متخصصة في المجالات الدقيقة لعلاج السكتات الدماغية، بما يسهم في رفع جودة الرعاية الصحية وتحسين مخرجات العلاج.
2. يدعو المؤتمر إلى تعزيز التعاون والتكامل بين برامج السكتة الدماغية في مختلف القطاعات الصحية، من خلال تبادل الخبرات والاستفادة من المختصين وتوحيد الجهود بما يحقق خدمة صحية متكاملة لمرضى السكتات الدماغية.
3. يشدد المؤتمر على أهمية التخصصات المساندة، وعلى رأسها التأهيل الطبي، والعلاج الطبيعي، وعلاج النطق والتخاطب، باعتبارها جزءاً أساسياً من الخطة العلاجية الشاملة لمرضى السكتة الدماغية.
4. يوصي المؤتمر بتوظيف التقنيات الحديثة وتطبيقات الذكاء الاصطناعي في خدمة مرضى السكتات الدماغية، سواء في التشخيص المبكر أو تطوير أساليب العلاج والمتابعة، بما يسهم في تحسين جودة الحياة للمرضى.
5. يؤكد المؤتمر على تفعيل الرعاية الصحية عن بُعد في علاج ومتابعة مرضى السكتة الدماغية، وتقديم الإرشادات الصحية والنصائح العلاجية اللازمة لهم في منازلهم، ودعمهم في ممارسة حياتهم اليومية بشكل آمن وفعال.
6. يدعو المؤتمر إلى إشراك المختصين في تقييم الإدراك المعرفي لمرضى السكتة الدماغية، والعمل على تحديث وتطوير نماذج التقييم المعتمدة بما يتوافق مع أحدث الممارسات العلمية والمعايير.

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